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SYDNEY, SATURDAY, OCTOBER 15, 1955

No. 16

COMMONWEALTH



OF AUSTRALIA

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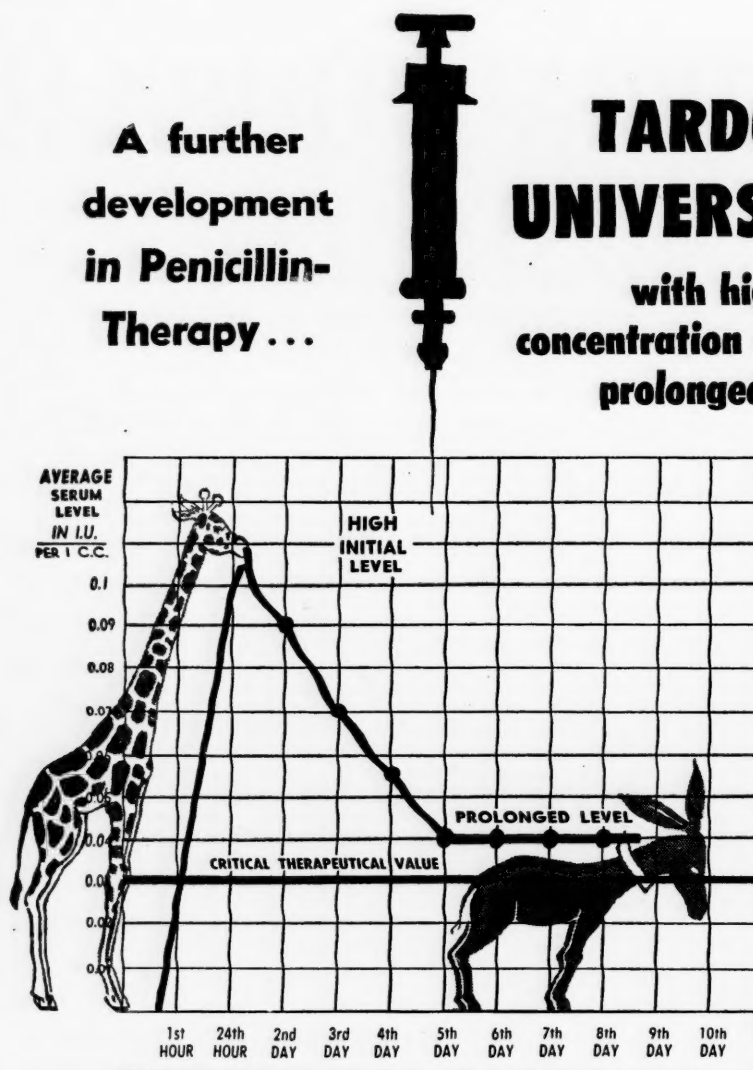
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Section of Naval, Military and Air Force Medicine and Surgery.¹

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Honorary Secretary: Dr. J. F. C. Cobley.

President's Address.

AIR VICE-MARSHAL E. A. DALEY (Victoria) presented his president's address entitled "Casualty Air Evacuation: Its Evolution and Present-Day Application". He said that in 1945 the importance of casualty air evacuation as a life-saving measure had been stressed by General Eisenhower. An account of the history of casualty air evacuation began with the successful carriage by balloon in 1870 of 160 patients during the siege of Paris. However, it was not

until 1915 that the first carriage of a casualty in an aeroplane had been recorded. From then on the numbers carried by the Royal Air Force gradually increased. In 1929 carriage by ambulance aircraft was covered by an article of the Geneva Convention, which allowed for protection of personnel in the event of a forced landing in neutral or enemy territory *et cetera*. There was also provision forbidding the use of ambulance aircraft for observation, photographic work *et cetera*. During the 1939-1945 war air ambulance units were employed, but were quite inadequate to meet the evolution of modern warfare. The development therefore followed of the use of transport aircraft without protection, which carried equipment,

¹The meetings held by the Section of Naval, Military and Air Force Medicine and Surgery with the Section of Oto-Rhino-Laryngology, the Section of History of Medicine, and the Section of Anaesthesia have already been recorded.

ammunition and men to forward zones, returning with casualties to the base. That practice then became the regular procedure. Finally a firm policy was adopted in the British and United States forces, and a new era dawned with the use of ordinary aircraft provided with stretcher fittings and carrying litters, which transported casualties on return journeys with no Red Cross protection. Establishments were created for casualty air evacuation units, flight nurses, oxygen and medical equipment for use in flight *et cetera*. The responsibility was placed on the air forces and the air force medical services. The system was born of necessity and logic, and Red Cross ambulances as such disappeared.

Air Vice-Marshal Daley said that the Germans had practised the same thing between 1936 and 1938 with service aircraft JU52 in the Spanish Civil War and again in Poland in 1939-1940. The Russians had similarly used air evacuation in Finland in 1939 and 1940. In June, 1942, the War Department of the United States had firmly committed their Army Air Corps and its medical service to casualty air evacuation. A similar position evolved in the Royal Air Force. In the Royal Australian Air Force units for casualty air evacuation were formed in New Guinea in 1943 and 1944. Post-war policy was accepted by the British chiefs of staff in 1949 and by Australian chiefs of staff in 1951, and placed the responsibility for casualty air evacuation on the air force and the air force medical services. The joint chiefs of staff established the Military Air Transport Service (MATS) for world-wide operational air evacuation and the handling of military medical patients in the United States forces. On September 7, 1949, the United States Secretary of Defence directed that the evacuation of all sick and wounded in peace and in war would be accomplished by air as the method of choice, and only in unusual circumstances would hospital ships and other transport be used. Hospital ships were assigned the role of floating hospitals, not transports.

Air Vice-Marshal Daley went on to say that on the debit side of casualty air evacuation were, of course, enemy action, weather troubles and unserviceability and non-availability of aircraft. The British and United States forces had to date been able to perform casualty air evacuation with relative air superiority; however, without that, fighter protection could at times be necessary. The development of helicopters had revolutionized the saving of life in forward battle zones by the rapid transportation of selected patients from the site of the injury to surgical teams within 10 to 70 miles of the front. The important thing on the service side was thorough understanding between the three services on military, medical, technical and operational problems, so that along the line of communication of each service the air evacuation route was integrated. The present-day policy therefore covered helicopters, short-haul aircraft (for example, from Korea to Japan), long-haul aircraft (for example, from Japan to the United States, or from Singapore to Sydney), and aircraft for local or continental distribution (for example, Dakotas). Aircraft ranged in their capacity from 30 to 130 litters, in their speed from 180 to 300 miles per hour, in their length of haul up to 2500 miles, and might be pressurized.

Air Vice-Marshal Daley said that in view of the size of Australia the use of aeromedical evacuation in peace and war was worthy of consideration, and it might have a bearing on the distribution of hospitals and convalescent institutions to minimize wasteful and unnecessary use of medical and specialist manpower. It was necessary to make frequent reference to the present and past achievements of aeromedical evacuation in order to impress the various authorities with the possibility of its use in Australia.

L. LOCKWOOD (Victoria) referred to the disaster of U.S.S. *Bennington*, and said that air evacuation of casualties by helicopters had saved many lives. The value of the helicopter had been demonstrated at home during the floods in New South Wales, and incidentally that had resulted in a rise in the prestige of the services. Surgeon

Rear-Admiral Lockwood expressed appreciation of the work of Royal Australian Air Force flight nurses during the air transport of patients from Japan.

W. D. REFSHAUGE (Victoria) said that he had no doubts that air evacuation was all-important as a means of transporting casualties. He distinguished two phases—the forward areas with transport by helicopter, in which the important result was the saving of lives, and ordinary air evacuation, in which the big saving was in medical manpower. Major-General Refshaug expressed concern that there was a risk in the early stages of a campaign that insufficient helicopters would be available in forward areas because of the preoccupation of the air force with offensive operations.

Space Medicine.

LOUIS H. BAUER (United States of America) read a paper entitled "Space Medicine". He said that aviation medicine had only recently been recognized in the United States as a specialty. The Aero Medical Association was an international organization with branches all over the world, and there was an allied Space Medicine Association. Dr. Bauer recalled that his connexion with the medical aspects of aviation dated from 1918. At that time it was being realized that pilots had to be selected carefully and had to be specially cared for; experiments to determine the effects of altitude were carried out; later, further investigations became necessary as planes kept climbing to higher and higher levels. Then the effects of speed were added. Now, with jet aircraft flying much faster than sound, and with rocket propulsion being rapidly developed, the question of space travel beyond the earth's gravitational field was steadily approaching. Attention of scientists was turning to the physical conditions existing beyond the force of gravity—those studies had been termed "space medicine".

Dr. Bauer explained that by increasing the percentage of oxygen breathed man could be kept fully efficient up to 34,000 feet; but above that, efficiency decreased, even when pure oxygen was breathed, because of its low pressure; at 50,000 feet, where the atmospheric pressure was 87 millimetres of mercury, the atmospheric function of contributing to respiration ceased and complete anoxia existed. At 63,000 feet (47 millimetres of mercury) the body fluids would boil. Above 34,000 feet, then, the cabin needed to be pressurized by supercharges, but at 80,000 feet a sealed cabin was essential, since compressing the ambient air would be technically prohibitive, as well as producing a cabin temperature of 400° F., and ozone and possible other irritating chemicals would be included.

Dr. Bauer said that above atmospheric levels, at 200,000 to 400,000 feet, there was a border zone of space, the *aeropause*, where the air pressure had no effect on man or aircraft, and where gravity approached zero, so that things had no weight. The velocity necessary to escape from gravity was called escape velocity; it had been necessary to discover what speeds man could tolerate to reach escape velocity. Posture was a factor—prone, man could tolerate higher speeds than when sitting. Speeds below 8 G were most satisfactory, if anti-G suits were worn.

There were other factors involved. Cosmic radiation became important at 120,000 feet, and although its biological effects were not yet known in full, they could be severe. Ultra-violet solar radiation became important at 135,000 feet; at 400,000 feet the optical appearance of the sky was totally changed; at 500,000 feet meteorites would be met with. Above that level heavy nuclei rays would become important—the average energy of the primary radiation equalled 20 billion electron volts. That was the greatest hazard to human beings—not the total ionization dosage of those rays, but their extremely specific ionization.

Dr. Bauer assured his listeners that flights by rocket to the moon and eventually to the planets were within the realm of possibility. A space station, assembled in space, and rotating round the earth free from earth's

gravity, would be the origin for taking off into space. The engineering problems were more nearly solved than the medical ones. More information was needed about cosmic radiation, heavy nuclei rays, the solar magnet field, temperatures, and toxic gases. That information was being sought by rocket investigations.

J. C. LANE (Victoria) said that space medicine as a live subject had been highlighted by the recent news releases on work on satellite vehicles in several countries. It now seemed that the question associated with human space travel was not "if", but "when". It was known that considerable effort had been put into studying human problems associated with space travel in the United States of America and no doubt elsewhere. Two books had already been published on the subject. An important difference from orthodox aviation medicine was the difficulty of experimental reproduction of the factor under study—for example, zero gravity. Consideration of the atmospheres and climates of other planets could be based only on astronomical data. Cosmic radiation appeared as a likely limiting factor, and perhaps the only approach was to specify a tolerance time in transit through the zone of maximum intensity. If high altitude rockets were to be used in Australia, it was to be hoped that they could be used for gathering biological as well as physical data.

Demonstration of an Exercise in Atomic Warfare.

W. D. REFSHAUGE (Victoria) presented a series of photographs taken during a Royal Australian Army Medical Corps exercise in which the effects of an atomic blast were simulated.

J. DWYER (South Australia) said that he had seen the demonstration at Healesville. It was very realistic, and a great effort had been made to put it on. The effects of blast and heat were clearly shown, but of course the effects of γ radiation could not be appreciated.

P. BRAITHWAITE (Tasmania) said that the pictures of the casualties they had seen, although horrifying, were at the same time comforting, as they showed the great measure of protection that could be given by dispersion and adequate cover. They showed the advantages and defects of various types of cover, what happened to the man, and what happened to the materials of war. The series of pictures, adequately documented, must form the basis of the future tactical doctrine of the Australian Army, and Major-General Refshaug, the Director-General of Medical Services, was to be congratulated on leading the way.

Major-General Refshaug, in reply, said that the demonstration referred to a nominal 20 kiloton bomb, for which the radius of extreme damage for an airburst was about one mile. The dose of radiation at that distance was 50r.

Medical Problems of Atomic Warfare.

W. D. REFSHAUGE (Victoria) read a paper entitled "Some Medical Problems of Atomic Warfare". He said that the exploding of an atomic bomb at Hiroshima not only had opened a new era of warfare, but had thrown out a challenge to medical services everywhere. The problems which might arise from atomic warfare were legion, but the main ones were concerned with the handling of casualties and with the preservation of morale. Those were too vast to be dealt with in the present paper, so only the assessment and disposal of casualties would be considered. There would be enormous numbers of casualties, and there would be insufficient resources to care for them in the way that would be possible in peace time. The aims must be to salvage the maximum number of those who could return to some useful duty after treatment, and to avoid admitting minor casualties to hospital. That would require an assessment of patients into three groups: those who were likely to die whether treated or not, those who were likely to survive with treatment, and those who were certain of surviving whether treated or not. Such a broad assessment would require a ruthlessness not familiar to the medical profession; but survival of the majority might

depend on the efficiency with which that ruthlessness was applied.

Major-General Refshaug then pointed out that few nations had the resources to carry out proper care of atomic bomb casualties, and many of their resources might be destroyed by the bombing, so that assessment would have to be carried further, to ensure that those requiring specialized care would receive it; the others could be left to less skilled management. Treatment would have to be routine in the majority of cases, and limits would have to be placed on the use of certain materials. In the locality of the bombing the casualties could be expected to outnumber the uninjured, but certain casualties could be useful; an exposure of 200r would cause non-fatal sickness after three to four weeks, but a patient so exposed could do useful work in the interval; however, if he did arduous work his subsequent sickness might easily be fatal. Again, assessment must be effective.

The maintenance of morale was most important; although morale was largely dependent on leadership, it would be supported by efficient organization of medical services, but the ruthless nature of the necessary assessment of casualties might lower it.

Major-General Refshaug then described possible classes of injuries. He said that blast injuries were familiar to all, being dealt with daily as a result of road accidents; that injuries due to heat were not new, although having to deal with vast numbers simultaneously would tax resources; and that sickness from radiation was already familiar to many doctors. Guides to assessing casualties were based on the area of burns and the dosage of irradiation.

E. A. DALEY (Victoria) said that General Refshaug's paper was a very clear exposition of the facts on which logistics had to be based.

L. LOCKWOOD (Victoria) said that the paper was a fine start in what he would call the "massive thinking" that was needed on the problem. He felt that much of the data on the matter should be declassified. The Navy was interested in special problems, among which was the effect of an underwater burst (of a bomb deposited by a submarine, for instance) in Sydney Harbour, for example. The relief of a devastated city depended enormously on transportation. Where was that to come from, and where should emergency hospitals be set up? Surgeon Rear-Admiral Lockwood also referred to the work being done in association with the Red Cross Blood Transfusion Service on plasma expanders and expendable transfusion kits.

G. WALLACE (Victoria) referred to the relatively large distances separating big cities in Australia. In America, because of the distribution of cities, it was easy to envisage help from neighbouring cities; but it was difficult to see how that would work in Australia. Dr. Wallace was also concerned about the problem of repeated attacks.

J. SULLIVAN (New South Wales) said that from experience of disaster such as the New South Wales floods, it was clear that resources from outside the target area had to provide the relief. He thought that communications and transport were vital factors.

Major-General Refshaug, in reply, said that rescue parties could be exposed to 25r per week for up to eight weeks without much risk of immediate damage. He stressed the fact that the major job was one of immediate survival, and long-term effects simply had to be disregarded. Transportation of relief would depend on aircraft, both civil and military. He did not expect multiple attacks. One bomb would devastate a city, and there was no point in repeating the attack.

There had been previous experiences of large numbers of casualties. In a twenty-four-hour period Hamburg had had 50,000 casualties, Tokyo 109,000 and Dresden 300,000. The Germans had sent in service units from outside. He did not see any other solution. The services all maintained large bases outside capital cities, and special units from these would have to be sent in for rescue work.

Dermatological Problems in Service Personnel.

B. COLAHAN (Victoria) read a paper entitled "Dermatological Problems in Service Personnel". He said that the high percentage of casualties due to skin diseases was a source of major concern during the last war. It might be assumed that examinations of recruits would eliminate those with existing skin disease, and those with obvious signs of past disease which might recur, but there was no way to determine skin tolerance. There were three main factors producing cutaneous disorders — climate, nervous and physical stress, and localized infections, traumatic or otherwise.

Wing-Commander Colahan said that service medical officers should adopt a sane and cautious attitude towards the treatment of skin diseases. A definite diagnosis was the first essential, and there must be no hit-and-miss methods practised by medical orderlies. With regard to therapeutic agents, the antibiotic group had been of singular help; antihistamines had been disappointing; ACTH, cortisone and hydrocortone had been very successful, and the fact that in the services the patients were all healthy young individuals with no contraindications to those drugs allowed them to be used more freely. The worst feature during the last war was the tineaphobia of medical officers, with the consequent treating of many vesicular dermatoses with irritant fungicidal agents. Special instruction in treatment was necessary.

C. L. STATHAM (New South Wales) said that he thought that more basic information was needed on the care of the skin in the tropics. The wartime experiences were in part due to over-treatment of wrongly diagnosed "tinea", and to acriflavine splashed around by medical orderlies. Climatic effect was clear, as witnessed by the practical disappearance of foot troubles on board a particular ship after sandals were permitted.

A. G. FINLEY (New South Wales) supported the view that much harm came from the use of strong remedies on simple dermatoses. He was shocked to see that the new edition of the "Australian Pharmaceutical Formulary", hot from the press, still contained sulphanilamide cream. Much skin disease required sedation as an important part of treatment. Dr. Finley raised the question of the handling of severe dermatoses in national service trainees.

Medical Problems of Diving.

J. H. MITCHELL (Royal Navy) read a paper entitled "Medical Problems of Diving". He said that when a submarine dived, all external ventilation ceased; the air space was of the order of 400 cubic feet per man, and each man eliminated through skin and lungs several pints of water, consumed up to four cubic feet of oxygen per hour and exhaled some nine-tenths of that quantity of carbon dioxide, so that air conditioning was of extreme importance. When the oxygen content of the air fell to 17%, the effect was obvious, at 14% it was marked, and at 12% unconsciousness was usual; fortunately the corresponding increases in carbon dioxide caused symptoms—at 2.5% breathing was noticeably deeper, at 3.5% hard work was difficult, and at 5% it was impossible. But air-conditioning machinery was bulky and noisy—both most undesirable qualities in a submarine.

Surgeon-Commander Mitchell then went on to discuss methods of leaving and entering submerged submarines. He said that pressure increased by 15 pounds per square inch for every 33 feet of depth, so that when a submarine was submerged the hatches could not be opened; and even if they could, the inrush of water would be disastrous. There were two methods of equalizing pressure, the first by having a cylindrical tube or trunk of waterproofed fabric suspended from the edges of a hatchway in a special compartment. The crew would assemble in the compartment, standing outside the tube, and water would be let in from below. The rising water would trap air outside the tube, and when the pressure had risen enough, the hatch could be opened. Then the crew members would

duck under the end of the tube and escape through the hatch.

The other method would be to have a small chamber with external and internal pressure hatches. Two men, wearing breathing apparatus, would be shut into the compartment, which would then be flooded. They would escape by the outside hatch, then it would be closed, and the inside one opened and drained into the submarine; the procedure could be repeated as often as necessary.

There were many physiological dangers. Rupture of the ear drum was common during the rapid filling of the escape chamber. Nitrogen intoxication, similar in effect to alcoholic intoxication, could occur while men were waiting in the highly compressed air of the trunk escape compartment, or in the hull of the submarine if its air pressure was increased because of leaks. Carbon dioxide poisoning also occurred while men were waiting; 2% at atmospheric pressure became 12% at six atmospheres (at a depth of 165 feet), and that concentration would be rapidly fatal. In addition, if breathing apparatus was donned after exposure to increased carbon dioxide concentrations, there would be a severe reaction with nausea and vomiting. Oxygen want and oxygen poisoning also occurred. The mechanical effects of decompression, the "chokes" and decompression effects, the "bends", and finally the simple effects of cold, all had to be considered.

Surgeon-Commander Mitchell said that neither of the two methods described was really satisfactory, because many factors could interfere with their smooth working. It was not often possible to attach a diving bell to a sunken submarine, though that was the best measure. Free ascent in a submarine escape immersion suit was very satisfactory—the suit gave only some 10 pounds buoyancy, which provided a constant rate of ascent of four feet per second, and was designed for warmth.

J. C. LANE (Victoria) said that it was the general experience of all services that if escape requiring a complicated procedure from any vehicle, whether a submarine or high-speed aircraft, was to be successful, the crews had to be thoroughly trained in the escape procedure. That meant that there had to be an escape-training device. Dr. Lane said that he had seen the United States Navy escape-training tower at New London, Connecticut. The United States Navy used an artificial lung, but they also trained crews in free escapes from as deep as 100 feet.

S. J. Lloyd (New South Wales) stressed the need for discipline in the crew if escape was to be successful. Lieutenant Lloyd said that he felt that so far as was possible, in the escape drill an automatic device should be used, so that once a man had started he could not have any second thoughts. Escape gear for one reason or another often did not work. Rescue from outside was critically dependent on the weather. He wondered whether rescue could not be attempted from another submarine, perhaps specially fitted for that work. It might also be usable in wartime; at present a submarine disabled in war was simply abandoned because of the obvious impossibility of rescue operations.

Medical Experiences with Royal Marine Commandos in Malaya.

W. B. WILLDER (Surgeon Lieutenant-Commander, Royal Navy) read a paper on "Experiences of a Medical Officer with the Royal Marine Commandos in Malaya". He said that in May, 1950, the 3rd Commando Brigade, Royal Marines, left Hong Kong for service in Malaya. He was attached as medical officer to the 40th Commando. Warfare, particularly against an enemy who lived in dense jungle, was a new experience for most of them, including himself. On arrival at Penang they spent a fortnight engaged in drawing jungle-green clothing, including a special type of jungle pattern boot, the life of which was one month on active patrolling. In addition to clothing, lightweight webbing equipment was issued, including a machete—most essential for progress through the jungle.

The Commando broke up into four self-contained troops, each occupying a base camp situated near a large village or town. From that camp patrols were sent out into the jungle to specific areas when previous intelligence reports gave information of a bandit "hideout", or a sudden attack might be made in a village or rubber plantation if the bandits were running short of food, and thus give the security forces a chance to come to grips with the enemy.

Commander Willder said that from a medical officer's point of view, the four base camps quickly grew from being tented into firm wooden bashes with stone floors and fans. New cook-houses and even a canteen were erected in all camps, drinking water was obtained from a well and drawn through a combined filtration and chlorination plant. Latrines or "heads" were of the deep-bore pattern, likewise urinals escaped into the earth below. Each camp had a small runway sufficient to take an Auster aircraft, a valuable means of communication and a route of evacuation for a sitting casualty. His own medical staff of six sick-berth naval ratings was increased by a further eight Royal Army Medical Corps orderlies to provide extra cover for patrols. He was able to have a main sick bay at Commando headquarters, with three subsidiary sick bays in the other base camps. Two of the jungle base camps were close to villages where a Malayan Government dresser was the sole apothecary for the populace.

The liaison between civilian government dressers and the Commando troops was excellent; each helped the other with both treatment and stores. All sick bays and first-aid posts were well stocked with dry plasma and antibiotics. Strong emphasis was laid on preventive medicine in order to keep the fighting man in the physical fitness required to hack his way through the jungle carrying his food and weapons with him, and yet be capable of fighting the terrorists.

Commander Willder then said that the following measures were adopted to prevent malaria: Each man took a "Paludrine" tablet daily at the morning parade, whether in his base camp or out in the jungle on patrol; the responsibility for a man's taking his tablet was that of his officer. Long sleeves were worn after sunset, and dimethyl phthalate—a mosquito repellent—was liberally rubbed on the exposed parts of the skin. In all base camps the use of mosquito nets was enforced at night, and all living quarters were inspected by the duty officer to see that that order was carried out.

For patrols in the jungle, where it was impossible to carry a mosquito net on account of weight, a head veil soaked in dimethyl phthalate was utilized for the head and neck, and tucked under the jungle-green blouse. For the prevention of scrub typhus, all clothing including underwear was impregnated three times a week with dibutyl phthalate; in the rainy season it was done more frequently. That preventive measure again was made the responsibility of the man's officer. One quickly became accustomed to removing leeches from various portions of one's anatomy with a cigarette end. A prophylactic measure against skin diseases, in particular ringworm, was to encourage every man to get a good suntan in the base camp; the routine was bare buff-negative shirt. Body and foot powder was issued generously and used by all, especially out on patrols, where washing facilities were limited. A man would return from a patrol having lost all his suntan, and appear pale beside his fellow who had been in the base camp—an ideal candidate for skin disease, if he did not show signs of it on his return.

Commander Willder went on to say that an adequate and varied diet was available in all base camps, with plenty of fresh vegetables and fruit, but the man on patrol had to survive on dried rations which could be reconstituted; weight was a major factor, especially as arms, ammunition and radio sets had to be carried and still one had to cut one's way through the jungle with a machete. The standard jungle food pack soon became monotonous through lack of variety; the ever-faithful basis was bacon, beans and bully beef, together with vitamin tablets, and the

essential salt-tablets to prevent heat effects. Water was obtained as and when required from streams, each man using his water bottle and individual sterilizing outfit. One man taken unnecessarily sick in the jungle might jeopardize the work and safety of the entire patrol. A sick-berth attendant or Royal Army Medical Corps orderly accompanied all patrols with his first-aid gear. His presence alone was a big factor in morale. A stretcher, if required, could easily be improvised by means of the waterproof cape issued to every man, by cutting two poles to fit either side of the cape. Every patrol was in radio link with its base camp. Although the sick-berth attendant carried tubonic ampoules of morphine, every officer and non-commissioned officer of sergeant's rank was issued with a tin containing two ampoules, with directions on the inside cover of the lid of the tin, and an indelible pencil for marking the wounded man's forehead. Every man carried his own first field dressing as part of his equipment.

The medical officer's daily routine was both interesting and varied. If the entire Commando was employed on an operation, he would accompany the headquarters and set up a regimental aid post, to which casualties and men suffering from routine sickness could be evacuated. Immediate first aid and resuscitation were available for all casualties, whether service or civilian. On the other hand, the medical officer might spend his week making routine visits to all base camps for general medical duties, and checking the hygiene and sanitation and testing the water. Often during those visits, made by armoured car or in his own jeep along with a convoy and escort according to the state of terrorist activity in the areas through which he had to pass, he would be asked to examine civilians (Malays or Chinese) by the Government dresser. In many cases it was the only time when a doctor would examine some of them. It was not unusual to examine patients with yaws, advanced tuberculosis and the common malaria. All the Commando wounded were evacuated to the military hospital at Taiping. Commander Willder said that it was in Malaya that one first saw the value of the helicopter as a rapid and ideal means of evacuating casualties from a jungle clearing. One stretcher patient and one sitting patient could be taken per flight. Men with non-urgent conditions were usually evacuated by road with suitable armed escorts. Any man who suspected that he had venereal disease out on patrol remained until the patrol was over. That measure, admittedly bad medicine, greatly lowered the high incidence rate of venereal disease.

In answer to questions, Lieutenant-Commander Willder said that he had encountered only one case of malaria in six months. There was little or no concealed venereal disease so far as he knew. He had later examined a large number of the Commando troops in a training base, and there were none of them with venereal disease histories that had been concealed at the time. The length of a patrol was about three weeks.

Effects of Prolonged Flight at High Altitudes.

W. LOCKHART RAIT (Victoria) read a paper on some physiological problems of aircrew during and after prolonged flight at high altitudes. He said that no significant abnormalities had been found in the blood pictures of seven airmen, nor was their urinary excretion of coproporphyrin outside normal limits, after concentrated flying for three months at altitudes over 40,000 feet. Preliminary estimations of 17-ketosteroid excretion were made on the urine of men after ten to twelve hours' flight at 23,000 feet, and although no controls were available, it appeared that there was no considerable increase in excretion after the strain of such flights.

Wing-Commander Rait then described an experiment in which electroencephalograms were taken in an endeavour to assess flying fatigue. In some subjects there were mixed fast and slow rhythms indicating a state of fluctuating awareness after twenty-four hours without sleep, but the results were not conclusive.

J. SACHS (Victoria) referred to the presence of radiation in aircraft from another source—namely, radioactive instrument dials. Squadron-Leader Sachs said that American work had shown the level to be a good deal more than negligible. He made a plea for a sense of proportion in that matter, and said that after all, a routine series of X-ray examinations could give a dose of 15r, which was comparable to the dose of cosmic radiation at high altitudes.

Tests of Colour Perception.

J. C. LANE (Victoria) read a paper entitled "Some Tests of Colour Perception". He said that tests of colour perception were of three types: screening tests to sort out the 8% of colour-defective males in the population, diagnostic tests to classify defectives and aptitude tests to determine relative fitness for particular tasks. In administering tests there was no place for clinical judgements, but there must be a cast-iron procedure and cast-iron scoring. Pseudo-isochromatic plates needed correct lighting, and had to be exposed to the subject at the correct distance for the correct time. Similarly, the conditions for using colour lanterns must be accurately observed.

L. LOCKWOOD (New South Wales) asked for definition of the terms protan, deutan and chroma. He said that the Navy had wanted to use the Martin lantern, but found it was expensive and had a long delivery delay. Admiral Lockwood asked whether the ophthalmologists could not help with a better means of classification.

W. DEANE-BUTCHER (New South Wales) agreed that ophthalmologists knew too little about colour perception. He was not happy with the present test procedures. Dr. Deane-Butcher cited an experience of his own; he had tested the same man on two different occasions on behalf of different agencies, and had passed him on one occasion and failed him on the other. Dr. Deane-Butcher wondered whether other safeguards could be added to colour signals—for instance, shape or position.

E. A. DALEY (Victoria) asked how one could tell when a set of plates was too old to be used safely.

Dr. Lane, in reply, said that protan, deutan and tritan simply meant colour defectives of type I, type II or type III. Chroma was difficult to define without other preliminary definitions, but corresponded roughly to the concept of "saturation". Dr. Lane said that he did not want to give the impression that the Martin lantern was a poor one; in fact, they had found that it correlated well with the Farnworth. Its test procedure was rather complicated and bothersome, and for that reason was likely not to be carried out properly. The best solution for colour vision tests was to stop using them; but that meant that the engineers would have to stop using present colour codes on signals and controls. Dr. Lane gave two instances in which that change was being made. In reply to Air Vice-Marshal Daley, Dr. Lane said that there was no quick way of deciding when a plate test should be discarded. It was necessary to test a number of defectives on the doubtful set and on a known good set.

Venereal Disease in Occupational Forces in Japan.

ROGER DUNLOP (New South Wales) read a paper entitled "The Control of Venereal Disease in the British Commonwealth Occupation Force, Japan, 1946-1947". He said that within a few weeks of the arrival of Australian troops in Japan in 1946 the rate of exposure to venereal diseases was very high, and the infection rate was 700 per 1000 *per annum*, the highest published figures on record. Drastic measures became necessary, since the troops were situated in the centre of a huge "red light" area with 100% infection among the prostitutes established by the Japanese for their servicemen. The Australian troops had no amenities, access to unlimited cheap alcohol and poor discipline. Prophylactic ablution centres were established, stringent rules and routines were introduced, and heavy penalties were imposed. The United States Army introduced a civilian hospital to control sources of infection;

a vice squad, run in conjunction with the Japanese police, took over the locating of infected prostitutes. Those measures resulted in finally reducing the infection rate to 120 per 1000 *per annum*.

J. TRUDINGER (Victoria) said that in his experience those servicemen who resorted to prostitutes had a high incidence of venereal disease; those who acquired a house and a Japanese "wife" had a very low incidence.

Carriage of Invalids on International Air Services.

E. H. ANDERSON (Victoria) discussed the carriage of invalids by air. He said that this had become an everyday occurrence in civil aviation. That was largely due to the rapidity and comfort of that form of travel, and to the knowledge by the general practitioner that there were very few contraindications from the clinical point of view. Travel by air had been so satisfactory that it had been accepted as a general rule that if a patient was fit to travel at all, he could fly. The advent of pressurized cabins had meant much to aviation. Aircraft on overseas routes generally flew so that the cabin altitude rarely exceeded 7000 feet. At that level the percentage of oxygen saturation of the arterial blood was adequate for the ordinary passenger. If a patient was well compensated as to his circulatory and respiratory functions, he would in the vast majority of cases travel satisfactorily. However, because there were some degree of hypoxia, and some variation of atmospheric pressure in ascent and descent, some selection of cases was necessary. Important additional considerations were variations in climate along the route, and time changes in relation to Greenwich Mean Time. Overt fatigue had been noted as the chief effect of long journeys on sick people. The large modern commercial aircraft was a very comfortable vehicle, and was suitable to transport patients provided proper precautions were taken. The main considerations in selecting a patient for air carriage were the following: (i) the well-being of the patient; (ii) the welfare of other passengers; (iii) the safety and operation of the aircraft. The patient had to be fit to fly, and had to have a sufficient reserve of strength to stand the fatigue of a long journey. A patient suffering from any condition which would be a danger or an embarrassment to other passengers could not be accepted, nor could one whose condition might prejudice the safety of the aircraft or might cause quarantine delays. Patients who travelled without acquainting the airline of their disability caused the most trouble. Much could be done to make the journey safer and more comfortable if the requirements of the patient were known beforehand. It was suggested that doctors urge patients to consult airline officials about their journey. They would thus avoid inconvenience to themselves and other passengers. Special care should be exercised in advising elderly people whether to travel by air.

A. SELDON (New South Wales) said that the recent paper of Bourne, which Dr. Anderson had mentioned, on air travel undertaken by people who had had infarcts, was something of a counterweight to the rather ultra-conservative views of Whittingham. Dr. Seldon considered that the increase in cardiac output even at 10,000 feet was less than the increase due to walking, so that it seemed difficult to justify severe restrictions.

L. LOCKWOOD (Victoria) asked whether there was any evidence of transmission of tuberculosis from patients with "open" lesions during air transportation, and referred to the possibility of venous thrombosis resulting from leg compression.

J. C. LANE (Victoria) said that, though air transportation of sick people was now quite accepted and indeed indispensable in the areas of low population density, it was not well realized that there was a useful role for air ambulances in the relatively densely populated areas of south-eastern Australia. At present he thought airlines were being imposed on in the carrying of stretcher patients. He hoped someone with time and resources could make a medico-economic study of the matter.

Collection and Evacuation of Wounded in the Korean War.

N. M. KATER (New South Wales) read a paper entitled "Collection and Evacuation of Wounded in the Korean War". He described how, when the war opened, there had been little time to organize casualty evacuation, and the wounded had had to be evacuated by any method available, but as the United Nations forces had become organized air bases had been established and internal air evacuation commenced with evacuation from the front line to the Mobile Army Surgical Hospitals (MASH) by helicopter, and thence to the main United States army hospitals by Dakotas and Skymasters. He went on to say how, as time elapsed, almost every patient was evacuated to Japan by air in United States Combat Cargo Skymasters. At first British Commonwealth Forces patients had been sent by those means, but when the Royal Australian Air Force Dakotas arrived they flew all Commonwealth patients directly to Iwakuni.

Dr. Kater explained that Korea was a mountainous country, and ground evacuation involved a long carry, up to eight hours, by four bearers, then a trip by jeep over tracks, and often a further trip by motor ambulance over notoriously rough roads, before a patient could reach a surgical unit. The Korean campaign was the first in which helicopters had been used for evacuation of wounded from the front line; H13D Sikorskis were used, chiefly in areas inaccessible to wheeled vehicles. They carried a stretcher on each side of the pilot's cabin, and took patients to a MASH, which was a tented, seventy-bed, self-contained mobile unit, located as near to the front line as possible, staffed and equipped to cope with patients who would be unable to stand further evacuation, such as those with abdominal wounds, open chest wounds, severe compound fractures, and severe burns. It had nurses on the staff. One United States MASH had a neurosurgical team. Helicopters would be stationed at a forward element of a regimental aid post, and when called for they would land as near as possible to the wounded men, sometimes actually in the front line; occasionally they would be hit by small arms fire. With their use a severely wounded man could be carried to the MASH, given a blood transfusion and operated on before he became severely shocked. Despite the limitations of helicopters, which could be used only when command of the air was maintained, and when visibility was good, twelve Sikorskis had evacuated 4300 casualties from the front line in the first ten months of 1951.

Dr. Kater said that patients were evacuated from the MASH as soon as their condition permitted, either by train or by air. The Commonwealth Division was supported by the NORMASH, staffed by Norwegians. Evacuation thence was by train to the 121st Evacuation Hospital near Seoul, then by Royal Australian Air Force Dakota to Iwakuni, and finally by train to the British General Hospital at Kure. The 121st Evacuation Hospital also had a neurosurgical team, and received patients from the United States neurosurgical MASH if they were unfit to stand the trip to the neurosurgical clinic in Tokyo. Also supporting the Commonwealth Division were an Indian field ambulance, whose staff were all trained paratroopers (a surgical team from the ambulance had jumped into action on one occasion) and two Canadian units, while the

Royal Hellenic Air Force supplied Dakotas for transporting wounded.

Dr. Kater mentioned that other units were a United States field hospital at Pusan, a Norwegian hospital, a large prisoner-of-war hospital staffed by two United States field hospitals, and a Korean army hospital. One Danish and two United States Navy hospital ships served off the coast. Evacuation to Japan was by United States Skymasters carrying 40 lying or 48 ambulant patients, and by Royal Australian Air Force Dakotas carrying 24 lying or 27 ambulant patients; flight sisters and medical orderlies were carried on all aircraft. In the winter hot air was blown into the cabins before loading patients. Oxygen was available. From Japan patients were flown to the United States of America in Stratocruisers and Skymasters, in Qantas Skymasters to Australia and New Zealand, in Royal Air Force Hastings to Greece, Turkey and Britain, and in Siamese Skymasters to Siam.

The rapidity of air rescue work by helicopters and large-scale evacuation of patients at all stages by air meant a very great saving of lives. By contrast, Dr. Kater said, the methods of the Chinese and North Koreans were very different. At the front line there seemed to be few facilities and the badly wounded were simply shot (that method had been used by the North Koreans on numbers of wounded Americans early in the war). When the battle had become static the dead and wounded would be collected; stretchers were used and crude field dressings; treatment was merely first aid.

Rescue of Pilots in Korea.

N. M. KATER (New South Wales) then read another paper entitled "Rescue of Pilots in Korea". He described how the Communist forces in Korea drew all their supplies by a main supply route leading through Pyongyang and Kaesong. He pointed out that the chief aim of the United Nations Air Forces was the neutralization of that route by an intensive day and night programme, which meant that hundreds of aircraft were in action all the time. Pilots shot down over enemy territory had little chance of escaping, or even of surviving in winter. Dr. Kater said that the United States Air Force had organized a very efficient plan, using amphibian aircraft for sea rescue and helicopters on land. Pilots had been instructed that if their aircraft were damaged they must report to their section leader and then head west for the sea. With each airstrike a Grumman amphibian would take station over Chodo Island. The section leader would warn the amphibian of the route the damaged aircraft was taking; that information would also be relayed by another connexion. Whenever possible a screen of fighters would accompany the damaged aircraft to protect it from attack. By the time the pilot had jumped out and climbed into his dinghy, the amphibian was often at hand to land on the sea and pick him up; he was then given first aid and treated for immersion. In winter pilots could barely survive immersion for half an hour, and the amphibians frequently could not take off because of spray freezing on the wings and tail. On land, helicopters provided similar services, but they could not operate at night.

Dr. Kater then described some of his own experiences in amphibians.

Section of Neurology and Psychiatry.¹

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Honorary Secretary: Dr. I. G. Simpson.

President's Address.

A. J. M. SINCLAIR (Victoria) took as the title of his president's address "The Limitations of the Psychiatrist". He said that during the past three years there had been no great advances in psychiatry, and none very substantial in neurology; there were indications that psychiatry had moved rather into the field of general medicine than into that of neurology. Psychiatrists had restated some of the problems of gastroenterology, cardiology, dermatology, obstetrics and gynaecology in terms of psychological dysfunction. New psychological concepts were sprouting overnight, to rationalize the extension of psychosomatic concepts. There was a tendency to be too preoccupied with causation of neurosis, to the detriment of its treatment; and in attempting to squeeze patients into artificial categories of clinical classification, there was a tendency to make the patient's behaviour fit into one or other particular theory of causation. That was made possible by a bastard application of the Freudian theory; the theory allowed its exponents to reconcile opposite components of behaviour by applying the principles of bipolarity.

Dr. Sinclair then said that psychotherapy was the cornerstone of all psychiatric treatment. Since the therapist's judgement of the patient's state must be subjective, the therapist might easily mistake his own well-being for that of the patient. Most clinical psychiatrists found that they were unable to select with precision those patients who would respond to psychotherapy, but had to wait on results. Very often psychiatrists, unable to produce peace in the subconscious, had to settle for a peaceful conscious exterior, maintained in spite of conflict in the unconscious. Therapy could assist a patient to maintain his mental equilibrium, but could not cause him to do so. The greatest limitation on the psychiatrist was the time consumed by psychotherapy; often the result was not commensurate with the time spent. Brief techniques had great value, and perhaps too much time could be spent in listening to unproductive talking. There was still confusion as to the method of action of insulin and electroconvulsive therapy. In the field of general medicine, although many more patients were being referred to psychiatrists on account of psychosomatic illness, psychiatrists found difficulty in playing a substantial role in treatment. Many physicians did not believe in or understand the theory of unconscious motivation, and psychiatrists should not stand aloof, but should make their specialty intelligible to the general physicians. At the same time the teaching of psychiatry needed reorganizing—it did not seem to offer anything of practical value at present. It was necessary for the psychiatrist to merge further with general medicine.

C. SWANTON (New South Wales) said that he found himself in the happy position of agreeing with every word of Dr. Sinclair's address. Dr. Sinclair and he and others round about their time had seen some very welcome changes in the general status of the psychiatrist, who had sprung up from the poor-relation class in medicine to the fellow who was doing pretty well for himself and might look forward to quite a future. Even the latest one about the psychiatrist, or head shrinker at music hall level, had

to be very good nowadays to raise a laugh, or so they hoped. Dr. Swanton thought it was largely the psychiatrist's growing sense of his own limitations which was putting him up in the world, so to speak. He had to give up all pretensions of expanding over the whole field of medicine, because psychotherapy lagged hopelessly behind psychological theory. None the less, psychiatry in a sense had always played a big part in the finer art of healing, in the person of the good doctor with natural human understanding. It had never mattered very much whether that good doctor had heard of, or was influenced by, theories of unconscious motivation, but now, with the growing recognition of psychosomatic medicine, he would soon be required to add substantial theoretical knowledge to his natural gifts. Dr. Swanton went on to say that it might be interesting for a moment to speculate on the future of psychosomatic medicine, which was closely bound up with the future of psychiatry. It was going to be very hard to say at any given time exactly what diseases came into that new category, or what were the proportions of "psycho" to "somatic", but he rather thought that new diseases would be straying in from time to time until the list became rather impressive, if not alarming. At some stage they might even be forced to admit that all medicine was, or might conceivably be, psychosomatic; whereupon, having performed the inestimable service of broadening the whole basis of medicine, "psychosomatism" might disappear as an entity. They would then be left much as they were at present, with general medicine on somewhat better terms with psychological dysfunction and psychiatry strictly a special branch. Dr. Swanton said that his suggestion might be described quite briefly as wishful thinking. He was very thankful to believe with Dr. Sinclair that psychiatry should, at the present stage, be used as an ancillary service to general medicine. He was absolutely sure that physical symptoms must be treated first, even when there appeared to be a marked degree of mental disturbance, because so often the emotional instability would clear up from the care and treatment which gave physical absolution. When that did not happen, or when there were no obvious physical symptoms, then it should be passed on.

Dr. Swanton said that psychotherapy, apart from the physical or mechanical treatments, resolved itself, as Dr. Sinclair said, into an attempt to put the patient in tune with his environment. He was suffering from a breakdown in his adjustment to living. Practically everyone who came in or was sent to the psychiatrist was sick with a sense of inadequacy, and the psychiatrist's success depended largely on his ability to relieve feelings of guilt. Dr. Swanton thought the most effective attitude for a psychiatrist was to think of his patient in terms of biological adjustment, rather than as a single entity striving for perfection. The problem was then simpler, less frustrating and altogether a more reasonable proposition. Freudian analysis, with its great goal of rebirth, was a more inspiring ideal than merely attacking symptoms, but it was necessary to do what seemed practical and often succeeded. The relief of symptoms, as in general medicine, and more dramatically in surgery, released the healing forces of Nature, working towards health and equilibrium. Theory would no doubt continue to throw more startling light on human motivation, but the practising psychiatrist could not afford to lose himself in a tangle of words and ideas. As Dr. Sinclair had said, what the psychiatrist

¹The meetings held by the Section of Neurology and Psychiatry with the Section of Obstetrics and Gynaecology, the Section of Oto-Rhino-Laryngology, the Section of Paediatrics and the Section of Rehabilitation and Physical Medicine have been recorded.

actually said to the patient was of far less consequence than his general attitude of positive sympathetic realism. He must be non-critical and reassuring, and success then depended largely on the previous personality of the patient. Here lay one of the psychiatrist's great limitations. Failure must lie in trying to patch up an old ship when the timber was rotten all through; but when the timbers were sound with an odd leak or two, only a well-trained worker was required to keep the vessel afloat. The success and degree of difficulty were bound up ultimately with the quality of the patient's former adjustments to living.

Dr. Swanton said that there was one further limitation in psychiatry of a rather different sort, which he would just mention briefly. That lay in the difficulty of persuading a great many people to see the psychiatrist at all. He would very much like to sell the idea that mental breakdown, of any degree whatever, was no more shameful than a ruptured appendix. He realized that the idea was not an easy one for the public to accept, because it roused the deep human fear of personal disintegration and loss of control. But since the doctors existed for the purpose of curing as many patients as possible by appropriate means, Dr. Swanton felt that it was important to try to overcome that fear. He knew that certain people could be helped along, even saved from suicide, if the inhibition about going to the psychiatrist could be relieved by a change in conventional outlook.

In conclusion, Dr. Swanton said that since the common aim of psychotherapy was to try to teach the patient to accept his own limitations, it was always timely, as they were doing at the meeting, to review and keep in mind the limitations of psychiatry.

Expressive Painting Under Hypnosis.

AINSLIE MEARES (Victoria) said that expressive painting under hypnosis was being used as a technique in hypnoanalysis. The hypnotized patient was given painting materials and was allowed to express himself graphically. While he was still hypnotized, his associations were obtained in relation to the objects he had painted. The material obtained in that way was integrated with sessions of waking psychotherapy. The process was known as hypnography.

The hypnotized patient, when told to paint, characteristically painted the outline of some object which was associated with some psychologically traumatic event in his life. It might be some recent event, some domestic or business conflict, of which he was fully aware; or it might be some conflict of childhood which had been completely repressed. The object painted always referred to some specific traumatic event. It was never just a house, or a man, or a woman; but always some specific object which was connected in some way with an event which was psychologically significant to the patient. Occasionally, the patient painted objects which were symbolic in the Freudian or Jungian sense.

Even the deeply hypnotized patient still retained some power of psychological defence. If the disclosure of psychic material in the painting was regarded as a threat, various psychological defences came into play. The patient might fulfil the suggestion to paint what was in his mind; but at the same time he might try to disguise the object painted, so that the therapist would not know what was painted, or he might try to deny all knowledge of what it was.

The significance of the object painted was determined by obtaining the patient's associations while he was still in the hypnotic state. The associations might be given in an air of detachment, or might be accompanied by violent abreaction.

Hypnography was only a technique in hypnoanalysis, and hypnoanalysis was only a technique in psychotherapy; so the material obtained in hypnography must be integrated with waking psychotherapy. Hypnography was a valuable aid in hypnoanalysis with patients who did not ordinarily talk readily in the hypnotized state. The graphic expression of a conflict involved different psychological defence mechanisms from the verbal expression of the same conflict. The spoken word was easily denied and

forgotten, but the conflict expressed in painting actually confronted the patient. Not only were different psychological defences called into play, but it seemed that different mechanisms of psychological integration were involved. That process might account for the degree of symptomatic improvement which sometimes followed hypnography, which was not explicable on the grounds of direct suggestion, and which might occur before significant insight had been achieved.

IAN MARTIN (Victoria), in opening the discussion, said that Dr. Meares had stated certain differences in his concluding remarks, but those might be regarded as being not fundamental. In support of that view some general principles could be stated and used as a framework against which to match Dr. Meares's work. The first point was that a fundamental concept that had emerged from psychoanalytical practice was that behind the manifest content of any form of behaviour lay a latent content which could be elicited by suitable techniques. Unconscious thoughts, feelings and impulses were thereby displayed in more easily recognizable form. Conscious discovery and awareness by the patient of such unconscious contents was a step towards the solving of unconscious conflicts. The doctor's awareness of mental content that was still hidden from the patient had no direct therapeutic effect.

It was also a fundamental concept that symptoms of psychological illness, whether neurotic or psychotic, tended to arise when there were continuing emotional blocks to the discharge of instinctual tensions. Those instinctual tensions were biological, having both physiological and psychological aspects, and means of discharge of those tensions were both physiological and psychological. Those discharges involved motor activity, ideational content and affective experience. Broadly they fell into two categories—the hating, angry and destructive, and the loving, tender and constructive; but commonly behaviour expressed various admixtures of the two categories and in varying degrees of intensity. Discharge of such tensions would tend to restore inner calm and so lessen the need for mental defences and consequent symptoms. Expressive art provided opportunities for such discharge of tensions. Under hypnosis the emotional blocks were reduced by suggestion. Unless those blocks could also be understood and resolved, they would still remain to dam up tensions anew. That was the chief task in psychotherapy. The removal of such blocks required a psychotherapeutic technique that brought into consciousness the nature and meaning of those blocks. That newly acquired self-awareness would provide the possibility for the patient to conduct his life and behaviour in a way more satisfying to himself and better adapted to his environment.

Further, there were mental mechanisms of defence, just as there were bodily mechanisms of defence. As with somatic symptoms, most psychological symptoms were expressions of the operation of those defences against psychological trauma.

Dr. Martin suggested that in accord with such principles Dr. Meares was approaching particular kinds of manifest behaviour and exploring the latent content with a technique that he found suitable to his needs. He would, Dr. Martin considered, agree that the successful application of his or any other technique would depend largely upon the thorough appreciation of sound theory and practice. It was in that light that close parallels could be found between Dr. Meares's work and other psychoanalytical orientated psychotherapy, and the stated differences appeared not to be fundamental. Therefore Dr. Martin was sure that Dr. Meares's work would find a wide and appreciative audience.

H. F. MAUDSLEY (Victoria) asked if the patient had a clear memory of the hypnography, and if Dr. Meares went over it again with the patient when he was conscious.

Dr. Meares, in reply, said that hypnography was usually integrated with general psychotherapy, but the particular incidents painted were not discussed in general psychotherapy unless the patient wished. Otherwise the material might be too traumatic if raised by the psychiatrist.

J. WILLIAMS (Victoria) asked whether the patient's referral to a specific object might be due to suggestion.

Dr. Meares, in reply, said that he felt that the content of the patient's painting and reply to questions about his productions were in no way due to suggestion if the hypnotist's questions were properly framed.

J. BOSTOCK (Queensland) said that the dynamics of hypnotism were referable to a primitive mechanism, instanced by the suggestibility of birds, animals and primitive peoples. Further evidence might be seen in the phenomenon of expressive painting under hypnosis. In Professor Bostock's experience the use of the paintbrush and the blackboard was invaluable to the psychiatrist who was puzzling out the problems of children. Their thoughts were readily translated into graphic form, though they were not hypnotised. It might well be that the therapeutic value of hypnosis did not lie in hypnotism *per se*, but in its acting as a means of access to the graphic period of childhood, when pictures flowed untrammelled as in a dream. Professor Bostock asked Dr. Meares for his views on whether the paintings merely tapped primitive childhood drawings.

Dr. Meares, in reply, said that there was a difference, in that childhood tried to draw well, but the patients under hypnosis drew badly as a defence to try to hide their conflicts.

Paranoid States.

B. H. PETERSON (New South Wales) discussed the clinical pictures seen in paranoid states. He said that stress would be laid on a particular type of syndrome seen in New Australians. There seemed to be no point in describing the well known clinical features of paranoid schizophrenia, paranoia and paraphrenia, though of course those diseases were met with in migrants as in other subjects; and in the limited time available he did not wish to be drawn into the controversy concerning the classification and nomenclature of paranoid states in general. The condition that seemed to merit discussion in the present context might be called "paranoid reaction", for want of a better term. Paranoid reactions were relatively short-lived illnesses with a good prognosis, occurring in predisposed individuals (or even in apparently normal individuals) under stress. The stress might be a physical illness involving hospitalization (it was not uncommon to see mild paranoid reactions in the wards of a general hospital), imprisonment for legal or military reasons, or migration to a strange country, in all of which situations the patient found himself under some form of stress in unfamiliar surroundings. In the present instance they were concerned with the migrant who easily found material for distrust in trying to adjust himself to new social customs, and the language difficulty might add fuel to the fire. Everyone was prone to misinterpret conversation which was only half understood. Similar reactions were seen in the partially deaf.

Dr. Peterson went on to say that many of the patients affected were adolescents or young adults. Those predisposed to develop paranoid reactions were sensitive and emotionally labile, proud, yet lacking in self-confidence, and often there was a sense of guilt over some secret habit or circumstance, such as masturbation or infidelity. Then some misunderstanding, or some actual or imagined insult or suspicion, increased the feelings of guilt and insecurity, and the patient began to think that people were looking at him accusingly or conspiring against him. There developed increasing anxiety and finally an agitated depression. There might be some emotionally-determined clouding of consciousness with hallucinations and mild confusion. Mayer-Gross, Slater and Roth (1954) stressed the psychogenic nature of the syndrome, because removal of the patient from the environment involved in his delusions, and appropriate therapy, resulted in recovery in some weeks or months, leaving an intact personality. An illustrative case history was then described.

Dr. Peterson said that a similar syndrome in young Polish migrants in England shortly after the war had been described by Kino in 1951. They also had recovered with electroplexy and superficial psychotherapy, and he regarded the syndrome as a specific psychiatric entity. However, it was difficult to decide whether the primary disturbance was one of affect or of misinterpretation of

events or of the attitudes of others in the environment. Worries, social maladjustment and loneliness easily induced a mood of depression, which in turn might falsify judgement and perceptions. Dr. Peterson's own clinical impression of the conditions of those affected was that they were basically affective reactions with a paranoid colouring, occurring usually in individuals with a paranoid type of personality subjected to a particular type of stress situation. The features of the stress situation in migrants had already been presented.

With regard to differential diagnosis, Dr. Peterson said that paranoid reactions might be hard to distinguish from paranoid schizophrenia when seen in the acute phase. Paranoid schizophrenia was certainly much commoner, and the course and outcome of the illness should ultimately establish the diagnosis. In acute paranoid psychoses some organic cause should always be thought of and excluded in the early stages. It had been pointed out that paranoid reactions were not rare in physical illnesses, especially those associated with toxæmia and exhaustion. Confusional psychoses with a paranoid colouring must also be considered.

Another condition worth discussion was paranoid psychopathy. Paranoid traits arose during personality development as the result of a need for defence against repudiated instinctive drives, feelings of insecurity, guilt or failure to achieve over-valued goals. Inherited predisposition was often an important factor. By the mechanism of projection, the paranoid person enhanced his self-esteem by criticizing others, and relieved his guilt by blaming someone else. Those tendencies were usually shown even in childhood. The future paranoid psychopath was a stubborn, suspicious, secretive, lonely and insecure child. As he grew older he became increasingly sensitive about the attitudes and behaviour of others, and was always suspecting that they wished him harm. He became resentful, egotistical, humourless, rigid, argumentative, aggressive, intolerant, jealous and exacting. Such patients were misfits in society. They made bad husbands, wives and parents, and hence were often referred by marriage guidance and other social agencies. Their therapeutic management was difficult. Some seemed to remain in a state of relatively mild psychopathy, showing no further progression. Some possessed hypomanic excess of energy, and were constitutionally hyperthymic; those patients showed paranoid fanaticism and persistent litigiousness. Others were viciously antisocial and became dangerous and incorrigible criminals. Yet others gradually and insidiously developed into paranoid psychotics, and often presented an insoluble and tragic problem to their relatives and to their psychiatrist until they became certifiable.

IGNACY A. LISTWAN (New South Wales), in a discussion on the social and cultural aspects of paranoid states, said that modern dynamic psychiatry stressed the importance of early personal experiences and conflicts in causing mental disorder. Recent developments pointed to the importance of conflicts occurring later in life and caused by difficulties in interpersonal relations. Social catastrophes such as war and migration were a particular and very drastic instance of those difficulties. Such difficulties and conflicts were particularly common in the present age.

Dr. Listwan went on to say that make-up, personality, character and temperament were different in different cultures. Accordingly, pathological reaction types, whether they were neurotic or psychotic, differed also. Those points were of importance in considering the observation that migrants very frequently developed paranoid states and paranoid-like reactions in cases of mental derangement. The question arose whether the reaction type was due to their personality or to their cultural and social make-up, or to factors operating in every migration and called for convenience "migration stresses". The problem was important in an era of massive movements of population with transplantation to new cultures.

With the object of throwing light on the problem an analysis was made of a group of patients interviewed over a period of three years. Although the material was not large enough to have statistical value, it appeared that (1) paranoid states in patients seeking psychiatric help

occurred nearly twice as frequently in migrants as in native-born patients, (ii) migrants suffering from paranoid states came mostly from eastern Europe, (iii) all patients with paranoid states were predominantly male, single and young adults, and (iv) paranoid patients had a tendency to escape from psychiatric care.

Dr. Listwan said that clinically the paranoid states in the series had certain common characteristics, and he quoted summaries of four typical cases to illustrate the common features. In all cases there was no history of previous mental disorder, although the patients had spent years under nearly unendurable stresses in concentration camps and displaced persons' camps. They were mostly in the younger age groups, were lonely males and had had to change their profession after arrival in Australia. They had spent the first two years after arrival in Australia in camps or hostels under contract in their own or similar national groups. Their breakdown had usually occurred not immediately after arrival but some time later, and in many cases after they had left the camp and faced responsibilities, financial insecurity, change of occupation and loneliness. Their delusions were usually based on war experiences: police and political organizations were involved. There was a threat of death. They were punished for previous misdoings. The delusions, which were localized and never bizarre, frequently did not incapacitate the patients, who were able to continue their work. Frequently, and particularly in primitive personalities, delusions were coloured by a monosymptomatic bodily complaint, particularly of a sexual nature. In such cases the outlook was poor.

Dr. Listwan discussed the dynamic reasons that appeared to be responsible for the repetition of the characteristic clinical picture. They appeared to be associated with the social factors involved in displacement and migration. As the stresses were purely environmental, the patients had a good prognosis. They improved remarkably when social adjustments and reeducation were undertaken. They should therefore not be considered as suffering from mental disorders in their real meaning, but as quickly recoverable potential assets to the community.

Discussing the social management of these patients, Dr. Listwan suggested that it might be not only of therapeutic but also of prophylactic value, and would be applicable not only to the deranged but also to the healthy. He visualized the following main avenues of approach: (i) encouragement to learn the native language as soon as possible, including emotionally coloured language, as in poetry and plays; (ii) the making of allowance for the mother language to be continued, for use in the family circle and in cultural groups; (iii) the provision of a substitute for mother country and other mother figures (a) by encouragement to marry and to establish a family as soon as possible, and (b) by encouragement to form national and cultural groups, societies and clubs; (iv) desensitization of the paranoid reactions to authority, such as police force and government officers, by guidance and reeducation.

A. T. EDWARDS (New South Wales) read a paper on paranoid reactions, with particular reference to displaced persons. He mentioned the part played in the development of such reactions by language difficulties, and by the reduction in social, cultural and occupational status to which such patients were frequently subject. Diagnosis was often difficult because of the language obstacle. Dr. Edwards said that paranoid types of reactions in aliens occurred in pseudo-paranoid psychoneurotic reactions, depressive states, schizophrenic reactions and the so-called aliens' paranoid reactions. The first three were managed along orthodox lines. Aliens' paranoid reactions had a fairly good prognosis. Unless certification was necessary, the patient was best managed by complete removal from the object and the paranoid setting, by encouragement in rapidly developing an adequate command of English, and by developing temporary social relationships within his own racial group. Finally, Dr. Edwards posed the question of what action could be taken in the care of potentially dangerous paranoid patients when there was no friend or relative to take charge.

JOHN F. WILLIAMS (Victoria), in opening the discussion, said that each of the papers appeared to be of value in

the consideration of a group of cases which must have caused everyone concern, and whose social implications were immense. Dr. Listwan's emphasis on current social stress was important, but his recommendation to encourage the use of mother language in discrete groups was, Dr. Williams considered, of doubtful value, and he did not agree with the emphasis on the Oedipal situation as related to mother country and tongue. He also questioned the significance of Slavic languages, as contrasted with Germanic, as being orally more pleasurable. He asked where was the evidence for regression to anal levels, at which alone, they were told, paranoid projections occurred. Good prognosis seemed to be due to environmental stress in later life, as opposed to early personality formation. Dr. Edwards had stressed the variety of conditions in which paranoid mechanisms were present and the benign nature of some of those, but also the danger in some, and had asked how to avoid it; to that there was no clear-cut solution. Dr. Peterson had stressed the significance of paranoid reactions and of the paranoid psychopath, and had given what appeared to be a well-balanced description of the aetiology of the condition of those troublesome persons.

Dr. Williams went on to say that none of the speakers had presented the audience with the classical Freudian slogan starting with "I love him" and ending up with "he hates me" *et cetera* after various manipulations, misplacements, contradictions and so on. For that, Dr. Williams for one was truly grateful, although he did not deny that in many paranoid people there were homosexual tendencies which might or might not be admitted, and which might or might not be conscious. The same could of course be said for many apparently normal as well as neurotic or psychotic individuals, and yet "unconscious" homosexuality had been widely regarded as the basis of paranoid thinking, that appeared to have been based on Freud's two papers "The Schreber Case" and "A Neurosis of Demoniacal Possession in the Seventeenth Century". Those had both been discussed in recent years by Fairbairn and by McAlpine and Hunter; and the latter appeared to Dr. Williams to have shown quite clearly that the analysis of the two cases was biased to such an extent that the word paranoid might quite well be used—for example, in the analysis of the artist's paintings of the devil as representing a superman, which did not seem to be the case, and in Freud's translation of the painter's "*ex morte parentis*" as referring to the death of the painter's father rather than of his mother, which might equally well have been the case. Bias, of course, was not the same as projection, and all those showing bias or projective mechanisms were not to be regarded as paranoid psychotics—otherwise who would be safe? It appeared that there was still a long way to go in discovering why some did become so divorced from reality that they were to be regarded as psychotic; and Dr. Williams felt that it was only by longitudinal evaluations on an objective basis, rather than by biased interpretation to fit in with preconceived ideas, that progress would be made. Surely all who had read it had felt stimulated by reading Freud's biography, with the understanding he gave of the development of his views, for example, of the significance of the Oedipal situation and unconscious homosexuality. In conclusion, Dr. Williams said that because the opening papers had all stressed the current difficulties of the New Australians as well as their antecedent trials and tribulations, they were of great significance.

D. MADDISON (New South Wales) asked Dr. Edwards whether he believed that paraphrenia was a separate entity rather than a form of paranoid schizophrenia.

Dr. Edwards, in reply, said that he did not wish to enter the controversy on nomenclature of paranoid states, but he felt that the closer one got to paranoia, the more fixed were the delusions and the more preserved was the personality. Paranoia tended to occur in an older and better integrated personality group.

Neuropsychiatric Aspects of Arterial Disease. Neurological Aspects.

L. B. COX (Victoria) said that restriction of nutrition in the brain due to arterio-capillary fibrosis or cerebral

atheroma might cause transient paralysis or degrees of dementia. There might be one large lesion, or a number of small lesions, leading to a general reduction of mental function; that dementia was common in old age. In its mildest form it was manifested by general lowering of efficiency, slow and faulty judgement, and difficulty in recalling known things and in retaining recent knowledge. Similar lesions might, alternatively, lead to psychoses such as the manic-depressive type, or to psychoneuroses, or to neuroses such as the anxiety type.

Dr. Cox then discussed specific effects of localized arterial blockage. He said that the brain acted as a whole, and too precise localization was not possible. When an anterior cerebral artery was blocked, there was hemiplegia with relative sparing of the arm and speech; mild initial aphasia could occur, and there might be temporary mental confusion. Blocking of a middle cerebral artery had little effect on the mental state if the subordinate side was affected; but when the dominant side was affected, various mixtures of aphasia could occur. Blocking of the posterior cerebral artery was incompatible with life, but blocking of its various branches could cause hemianopia, word-blindness, temporal lobe epilepsy, choreoathetosis, and a variety of abnormal behaviours. The problem of preventing cerebral atherosclerosis was of profound importance, but as yet little was known about it.

Pathological Aspects.

ROSS McD. ANDERSON (Victoria) said that in Australia in 1950 one in every eight deaths had been due to cerebral vascular disease. Cerebral infarction was due to the absence of collateral circulation, and its extent might be determined by anomalies in the cerebral arteries, particularly in the circle of Willis. Those were common, and might be single or multiple. Atheroma was common, and pronounced in persons over the age of fifty years; mainly the large arteries were affected, but when there was hypertension the process appeared to extend to smaller vessels. Its aetiology was not fully understood, but much research was going on to find out whether it was reversible or preventable. Atheroma produced diminution in the diameter of arteries, thrombosis, and weakening of the arterial wall; and since it affected mainly the larger arteries, it gave rise usually to definable syndromes, modified by the state of the anastomotic circulation. In hypertensive patients the smaller arteries were affected, and small strokes could occur.

Dr. Anderson went on to say that arteriosclerosis had a different aetiology from atheroma, appearing as either diffuse hyperplastic sclerosis or calcification of the media. The former was a natural accompaniment of senility, but was accelerated by hypertension. In the brain it affected the small arteries and arterioles, causing diffuse lesions and progressive impairment of function without localizing signs. Medial calcification was said to be usually found in the basal ganglia, and to be of no particular account. Dr. Anderson had found it to be quite uncommon, and associated with Parkinson's disease, Huntington's chorea or dementia.

Aneurysms were a common cause of spontaneous intracranial haemorrhage. There were two main types, the fusiform and the saccular. Fusiform aneurysms were associated with atheroma, arteriosclerosis and occasionally syphilis; they rarely bled, but might cause trouble by local pressure. Those of saccular type, frequently called congenital aneurysms, reached maximum incidence in the forty-five to sixty-five years age group; they formed nearly always at a bifurcation in the circle of Willis or its major branches. It had recently been shown that defects in the arterial wall at those sites were common. Haemorrhage from saccular aneurysms was usually associated with atheroma, arteriosclerosis and hypertension. On the other hand, primary intracerebral haemorrhage was associated with hypertension, with or without arteriosclerosis.

Discussion.

OLIVER LATHAM (New South Wales) was of the opinion that the pathology of the smaller arterioles of the brain

was perhaps somewhat different, the fatty degeneration of the media being accompanied or even preceded by the hyaline degeneration of the fibrous coats both within and without the media. At times, too, the functional aspects of the vessels had to be considered. For instance, the presence of many glial cells around those vessels implied a non-conveyance of sufficient nutrition to the surrounding tissues. Dr. Latham agreed with Dr. Cox's observation that often fairly widespread myelin paling or poor staining qualities implied a definite lesion—at least such a picture could be associated in the cord with very definite paralysis in lateral sclerosis. Finally, Dr. Latham had noted with interest Dr. Cox's case of a vascular cystic degeneration of one *globus pallidus*. He had had such a case of a year's duration, and on tracing the various levels down to the lower part of the medulla he had found a wide degenerating tract finally taking up a position dorsal to the olive, not noted in the sixth edition of Cunningham's text-book of anatomy but designated in the seventh edition as the pallido-rubro-olivary tract.

B. TURNER (New South Wales) said that Dr. Anderson had brought before them the necessity for further study of that group of common conditions which carried such a high morbidity. There was an increasing interest in the problems of cerebro-vascular disease, and Dr. Anderson's paper reflected that current interest throughout the world. Dr. Turner said that he believed that internal carotid artery occlusion as a common cause of cerebro-vascular disease should be recognized. The high incidence of that condition had previously been overlooked. Routine examination of the internal carotid arteries in cases of cerebro-vascular disease should be general practice. Dr. Turner also pointed out the infrequency with which a thrombus could be demonstrated in the middle cerebral artery, as compared with the relative frequency of that condition as a clinical diagnosis. With regard to the question of primary intracerebral haemorrhage, Dr. Turner said that he thought the high frequency of intracerebral rupture of aneurysms must be emphasized. Careful investigation of many patients considered to be suffering from primary intracerebral haemorrhage often revealed a ruptured aneurysm previously unrecognized. With regard to medial calcification and siderosis in the vessels of the basal ganglia, Dr. Turner said he agreed that it was possibly not so common as they were sometimes led to believe. It was also sometimes found at the edges of old infarcts, and had been said to be associated with conditions of anoxia. Dr. Turner said that Dr. Anderson had not raised the question of the necessity for maintaining an adequate blood pressure in people suffering from cerebral arterial disease. The high incidence of cerebro-vascular episodes associated with falls in the systemic blood pressure had been well established. Dr. Turner asked Dr. Anderson whether he felt that the exhibition of hypotensive drugs to hypertensive patients who had cerebral vascular disease might not be fraught with some dangers.

J. F. WILLIAMS (Victoria) asked Dr. Cox how neuroses and psychoses were released by cerebral vascular lesions.

Dr. Cox, in reply, outlined the psychiatric effects of certain focal neurological lesions—for example, sham rage. He said that, in addition, everyone carried an inherited constitution, and inherited tendencies might be released by any neurological lesion, irrespective of location—for example, manic-depressive psychosis.

Cerebral Vascular Disease.

The Electroencephalogram in Cerebral Vascular Disease.

A. B. CONOMY (New South Wales) said that the electroencephalogram was only an aid in the evaluation of cerebral vascular disease; the clinical study was of paramount importance, and psychometric testing was more valuable. In serial recording the electroencephalogram was able to detect minor asymmetries and to differentiate space-occupying lesions; it was of some value in determining the prognosis of cerebral vascular disease, but more research was necessary into the significance of minor abnormalities, especially of low-voltage fast activity.

The Modern Management of Acute Hemiplegia.

G. K. VANDERFIELD and R. A. MONEY (New South Wales), in a paper on the modern management of acute hemiplegia, described their experiences in the management of 100 cases of acute hemiplegia met with recently in neuro-surgical practice. They said that the experiences were presented because of the importance of making an accurate diagnosis in the case of hemiplegia in order that the correct treatment might be given. In their discussion on diagnosis they drew particular attention to the role of cerebral angiography which they considered was the process most likely to afford a definite diagnosis. In skilled hands it was relatively safe and could be carried out rapidly and without serious harm to the patient except in cases of cerebral degenerative vascular disease, when it might precipitate a further degree of vascular blockage. They then presented in tabular form a detailed pathological analysis of the cases in their series and also of the treatment suitable for each type of case. It was stated that when blockage of a major blood vessel had occurred, the best results were obtained if treatment was begun within a week. Surgery for extracerebral haematoma should be carried out immediately, while surgery for intracerebral haematoma yielded better results if the patient could be tidied through the early stages, so that evacuation of the clot might be achieved with limited risk. For thrombosis, embolism or spasm the treatment advocated was the use of a series of stellate ganglion blocks and the administration of anticoagulants or vasodilators. For aneurysm craniotomy was advised; carotid artery occlusion was performed when a ruptured aneurysm had led to the development of hemiplegia and direct attack was unsuitable at the time. Infection might be present, either thrombophlebitis or abscess. For thrombophlebitis the use of antibiotics and anticoagulants was suggested, and for abscess the use of antibiotics and craniotomy. For neoplasm craniotomy was required. In the series of patients under review 33 out of the total of 100 had fully recovered, good recovery had taken place in 11 cases, slight benefit in 11 and no benefit in 45. Of 31 cases of thrombosis, embolism or spasm, full recovery had occurred in seven, good recovery in three, slight benefit in nine and no benefit in 12. Of 15 cases of intracranial haematoma (excluding aneurysm or tumour), full recovery had occurred in 11 and no benefit in four. Of seven cases of aneurysm with or without haematoma, full recovery had occurred in two, good recovery in one and no benefit in four. Of eight cases of infective lesions, full recovery had occurred in five, good recovery in two and no benefit in one. Of 18 cases of tumour, full recovery had occurred in none, good recovery in two, slight benefit in one and no benefit in 15. Of other conditions treated surgically there were seven instances; full recovery had occurred in two, good recovery in three and no benefit in two. In 14 cases other conditions had been treated expectantly; full recovery had been obtained in six, slight benefit in one and no benefit in seven.

Discussion.

J. L. ALLSOP (New South Wales) in opening the discussion, referred first to the subject of infarction due to thrombosis of cerebral arteries. He said that when frank hemiplegia had developed from that cause, there existed a central zone of necrosis of variable size about which nothing could be done. Around that was a marginal ischaemic zone, much of which was destined to survive without any treatment. It was possible that more tissue might recover after the use of measures designed to increase cerebral blood flow. Stellate ganglion block appeared to be the most effective established method of accomplishing that. Many drugs given both systemically and intraarterially had been used, including "Priscol", papaverine and histamine. One of the most recent measures was the intermittent inhalation of 5% carbon dioxide in 95% oxygen to make use of the effect of raised carbon dioxide concentrations in increasing cerebral blood flow. The whole subject was rather speculative and required clarification by large-scale continuous experiment. Dr. Allsop said that in his experience convulsive seizures at the onset of cerebral infarction were commoner than was

generally believed, and that had been pointed out by Dodge and Richardson in a recent issue of *Brain*. With regard to subarachnoid haemorrhage due to ruptured aneurysm, Dr. Allsop said he wished to emphasize the well-established high frequency of signs of cerebral damage, including hemiplegia, which might be due to intracerebral rupture or ischaemia following spasm of the parent vessel. Angiography would help to distinguish the two, the treatment of which was, of course, radically different. Dr. Allsop also stressed the fact that ruptured aneurysm was more commonly found after the age of forty years than before. Views varied on the scope of surgery in the treatment of spontaneous intracerebral haemorrhage; but most workers would agree that it was indicated in the treatment of the young person with a history suggesting a rapidly expanding lesion of one hemisphere, as opposed to the apoplectic history of the capsular haemorrhage in the elderly hypertensive and atherosclerotic subject. The origin in the former small group was often rather obscure.

H. T. ILLINGWORTH (Western Australia) asked about the use of carotid clamps.

K. S. MILLINGEN (Tasmania) asked about the use of anticoagulants in cerebral thrombosis.

Dr. Vanderfield, in reply to Dr. Illingworth, said that the use of a clamp might give protection against further haemorrhage, and it was a trial to see whether the brain could stand ligation of the internal carotid.

To Dr. Millingen, Dr. Vanderfield said that he had not had enough experience of the procedure to be able to give definite results.

Parietal Lobe Syndrome.

GEORGE SELBY (New South Wales) read a paper entitled "Parietal Lobe Syndrome". He said that the boundaries of the parietal lobe were purely arbitrary, and bore no relation to the functions of the area; disturbances similar to those resulting from parietal lobe disease had also occurred in lesions of the temporal and frontal regions. Studies in comparative anatomy had shown that the parietal lobes and frontal association areas increased in size and volume much more than other cortical regions as the phylogenetic scale ascended, and reached their maximum development in man, which pointed to the importance of those areas for higher gnostic and intellectual functions. In parietal lobe disease the immense variety of disturbances of symbolic thought and language disposed of materialistic concepts of specific cortical speech centres. Recent observations had pointed to some degree of biparietal integrative function, and had suggested that the problem of sinistrality was much more complicated than was once imagined. The term "parietal lobe syndrome" was therefore not anatomically exact, and could include lesions extending into the posterior temporal and the occipital regions; moreover, some abnormal signs were not directly concerned with functions of the parietal lobe, but were release phenomena connected with other regions.

Dr. Selby said that the diverse clinical signs depended not only on the site of the lesion, but also on its size, abruptness of onset and rate of progress, and, not least, on the type of brain—the patient's personality and intellect. Any rigid classification of signs into syndromes was thus virtually impossible, and it was possible to speak only of certain combinations of symptoms and signs that were suggestive of disease of the parietal lobes. Within those limitations, some types of manifestations might occur in lesions of either side, some differed according to whether the lesion was on the dominant or the subordinate side, and others were found only in bilateral lesions. Dr. Selby illustrated these points by reference to 14 case histories, and concluded by saying that no territory within the brain surpassed the parietal lobe in the variegation of clinical phenomena which followed disease there; he stressed that most manifestations were rarely complained of by the patient.

IAN MARTIN (New South Wales) said that from Dr. Selby's skilful presentation it might seem that the elucidation and description of the parietal lobe syndromes was easy. In practice they were not. Those disorders were

met not infrequently in psychiatric practice, especially in mental hospitals with their growing population of aged patients with vascular disease. Therefore differential diagnosis between those organic lesions and psychogenic disorders that might mimic them was important. Perhaps hysteria and early schizophrenia were the two emotional disorders in which parietal lobe syndromes were most often imitated in some aspects. Early in the development of schizophrenic illness body image disturbances were very common; that was an expression of the failing powers of reality testing, a consequence of a withdrawal from the outer world of reality into an inner world of phantasy. In differential diagnosis between the organic and psychogenic counterparts few isolated points were of value. The decision properly rested upon a thorough acquaintance with the syndromes of both kinds. However, in the organic varieties (a) the syndromes were relatively discrete though of considerable variety, (b) there tended to be a march of progress in a relatively fixed framework, and (c) there was usually associated evidence of organic damage. The small branching arteries of the parieto-temporal area made it easy to understand why there were so many discrete parietal lobe syndromes. In the psychogenic varieties (a) the syndromes were usually more vague and diffuse and often tended to evaporate as the patient talked if he was allowed to talk freely about himself, and (b) the progress tended to be highly variable and fluctuant. Dr. Martin said that perhaps it still needed to be stated that psychogenic symptoms were just as real and as much in need of understanding and treatment as organic ones.

Dr. Martin asked Dr. Selby if minor image perception was found in organic as well as psychogenic cases.

Dr. Selby, in reply, said that it was known to occur in organic cases.

The Neuroanatomical Basis of Mental Disorder.

W. R. ADEY (Victoria) presented a paper on the neuroanatomical basis of mental disorder. He said that as a result of intensive research in a number of allied fields, it might reasonably be claimed that considerable advances had been made in recent years in knowledge of the functional interrelationships of various regions of the brain concerned in consciousness and emotional arousal. Whereas attention had hitherto been mainly focused on the frontal lobes in relation to clinical behaviour disorders, major research endeavours were now directed to the temporal lobes of the brain and their interrelationships with the tegmental regions of the brainstem. The temporal lobes appeared to be much more intimately and profoundly concerned in the mechanisms of behaviour than were the frontal lobes. Moreover, the unpredictable and often undesirable effects of the operation of frontal lobotomy had hastened research endeavours in other areas of the brain.

The central tegmental areas of the mid-brain and certain parts of the diencephalon (reticular formation) were intimately concerned in sleep and wakefulness. Those centres were played upon both by incoming sensory influences and by corticofugal projections from a variety of cortical areas. They were thus involved in neural integration at a high level.

Recent studies had shown that the temporal lobe and particularly the hippocampus were involved in the process of arousal, since the hippocampus received projections from the reticular formation through the fornix bundles and responded to all alerting stimuli with a slow rhythmic discharge at two to five waves per second. Evidence was presented that the hippocampal excitation might be passed via the entorhinal area to the mid-brain tegmentum once again, which suggested a reentrant system of neurons.

Dr. Adey said that the slow waves recorded in the hippocampus during arousal closely resemble the theta rhythms recorded with scalp electrodes in the temporal areas in children and in emotionally immature and psychopathically aggressive adults.

Profound changes in behaviour followed total removal of the temporal lobes. Restricted removal of portions of the temporal lobe, such as the amygdala, hippocampus

and entorhinal area, was likewise followed by significant modifications in behaviour. The physiological and anatomical interrelations between these regions were discussed.

Dr. Adey went on to review recent clinical studies of disordered behaviour resulting from lesions of the temporal lobe. He stressed the relationship between sclerosis of the hippocampus and asphyxial and encephalitic episodes in early life. He said that neonatal asphyxia, infantile convulsions and cerebral complications of the acute infectious diseases would appear to contribute a significant proportion of behaviour abnormalities in later life. It would appear that the hippocampus might be selectively vulnerable during asphyxial episodes.

IAN MARTIN (Victoria), in opening the discussion, said that much of the fundamentally important material presented had been derived from original research in which Dr. Adey had participated, or with which he had a first-hand acquaintance. Therefore, Dr. Martin would not presume to elaborate on the theme. However, he said that some simple statements might facilitate assessment and the incorporation of the information presented into psychiatric thinking. He said that Dr. Adey had shown clearly that he was aware of the difference between mental activity and its physiological correlates in neural activity; therefore, a simple statement might be made of Freud's concept of "the psychic apparatus", a concept that he had modelled on Hughlings Jackson's concept of "the speech apparatus". The psychic apparatus had a psychological and a physiological aspect to its function. The existence of the psychological function depended upon the continuance of the physiological function. The nature and contents of the psychological function were determined by psychological as well as physiological events. The conceptually distinct psyche therefore had its own laws. Psychological phenomena could be, and were, studied in their own right. Psychological disorders might exist without neurophysiological dysfunction; they might be, and were, corrected by psychotherapeutic intervention. Freud's contributions had provided fruitful theory and technique for understanding and intervening on the psychological level, but little was then known of neurophysiology. Dysfunctions in the neurophysiological substrate tended to disturb psychological function. The psychogenic and the organic disorders needed careful discrimination. In early life, maturation of psychological function proceeded *pari passu* with maturation in the nervous system and the rest of the body. The early and lasting emotional needs were closely interwoven with the early and lasting biological needs—namely, shelter, feeding, control of sphincters and social adaptation. For adequate maturation, emotional and physical, the importance of the mother-child relationship had been clearly established. Studies by psychoanalysts, anthropologists, psychologists and physiologists had received confirmation from Lorenz and others working in the field they described as comparative behaviourology. Their studies combined to show that if important psychological functions were not developed at appropriate stages of physiological maturation in the nervous system, then those functions might never be developed adequately. Lorenz had described imprinting, for example in the grey-lag gosling, which appeared as a more primitive counterpart of the mother-child relationship in humans. It appeared, then, that in infancy psychological and physiological maturation went hand in hand and were mutually interdependent. Michael Balint and others had explored phyletic and ontogenetic aspects of that interrelationship in maturation. Dr. Martin went on to say that neurophysiological maturation involved myelination of neural pathways, permitting greater efficiency and selectivity of conduction. It appeared true to state that in the phyletically and ontogenetically older parts of the nervous system, function was established earlier than in the newer parts. That was borne out by the order in which functions appeared and became more efficient. The older parts of the brain were composed largely of fibres without much myelin. The rhinencephalon, little of which was concerned with smell, was part of the archipallial system. The hippocampus, fornix system, hypothalamus, entorhinal area

and reticular system belonged to the old brain system. Thus the vital reflexes necessary for maintaining life, biological reflexes associated with smell, taste, feeding, elimination and sensual response, and the instinctual life were already provided for at birth. Neopallial development and maturation provided for increase in variety and subtlety in modifying those more primitive functions. In the human adult that reached a height that distinguished him clearly from animals in both his healthy and his neurotic behaviour.

In the old brain system autorhythms were prominent. Those spontaneously arising and perpetuating rhythmic activities were of earlier origin than the reflex activities. Thus the reflex arc, long thought to be the elementary function in the nervous system, was found to be a phylogenetically more recent and differentiated function. Autorhythms provided a basis for the spontaneously arising and perpetuating rhythms that formed the physiological substrate of instinctual life. It would be remembered that love and anger were the affective components of the constructive and destructive instincts respectively. Fear tended to arise whenever painful tensions arose within the organism. Those painful tensions were provoked from two sources: from the mounting tensions of spontaneous instinctual drives and from mounting tensions arising from interoceptive or exteroceptive sensory stimuli. All those tensions might be eased or discharged in appropriate relationships with another person, or by satisfaction of biological need or by reduction of the stimulus. Failure to ease, or behaviour that increased, such tensions for a young child disturbed its capacity to deal with its tensions adequately and so to mature emotionally. Electrophysiological correlates of the phenomena described had been displayed in his paper by Dr. Adey. From the old brain system, representing instinctual, and more primitive life, trains of physiological events proceeded via the hippocampus and entorhinal area and from the surface and from the viscera via exteroceptive and interoceptive pathways. Those influences evoked the arousal response with its reflections upon the neopallial functions, and those in turn reflected upon the archipallial functions. However, when all that had been said, the physiological substrate in any one species was remarkably uniform. The psychological experience of members of a species followed broad patterns that were remarkably uniform. Within those broad patterns, however, there was an enormous variety of minor variation. An overriding determinant, to which more and more attention was being paid, was the emotional environment of the growing child. How adequate was the parent-child relationship at each step of the child's physiological and psychological maturation? How pleasurable or how dreadful were the child's experiences associated with the evoking of the arousal mechanism and response? Should the psychiatrist seek to dampen that neural mechanism with drugs, mutilate it by operation, or treat the individual on a psychological level in a scientifically planned human relationship? Where psychotherapy still failed, one should be grateful for drugs, physical agencies and surgery. Those would be used more rationally in the light of neurophysiological information such as Dr. Adey had provided.

H. NORTH (New South Wales) asked Dr. Adey how one could explain some psychological needs as well as physiological needs in anatomical terms.

In reply, Dr. Adey said that hypersexual behaviour disappeared with castration in animals who had lesions of the amygdala. In cats, discrimination with regard to sexual partners was diminished by amygdalectomy. They also failed to learn from sexual rebuffs.

J. WILLIAMS (Victoria) asked Dr. Adey about temperamental variations caused by physiological stresses such as neurological lesions.

In reply, Dr. Adey said that correlation of specific behaviour defects with specific neurological lesions was rather empirical at present, but it was known that some posterior hippocampal lesions could be associated with asocial tendencies. Anterior lesions might be associated with aggressive psychopathic states.

Problems of Adolescence.

IRENE SEBIRE (New South Wales) discussed the normal aspects of problems of adolescence. She said that the development of the individual from birth to adulthood was a continuing process, all phases of which could present difficulties. Adolescence marked the transition from childhood to a more mature level of psycho-social maturity. It brought a restatement of earlier drives, with stronger claims for their settlement, and a more specific urgency for their satisfaction. The child approached adolescence with patterns of behaviour and attitudes to which he had become conditioned by experiences in family life, and in a gradually widening social environment. He marshalled those forces he had found effective in previous situations, but he carried also the burden of confusion or failure which had attended earlier attempts at adaptation. Earlier identification, which was family-centred, was modified by a more dominant drive—the need for acceptance by his contemporaries, motivated by similar drives and goals. For full membership of his group, he was required to submerge his identity to a degree in their collective activities and practices. That he might find incompatible with his desire for individual expression. Group requirements often conflicted with parental standards and expectations, necessitating a choice between familial and peer loyalties. The attitude of his parents towards his striving for independence and establishing a more mature status could influence his success or failure in achieving autonomy.

Dr. Sebire went on to say that the physical changes of puberty brought a reactivation of sexual drives present in a diffuse form in infancy and childhood. They had become invested gradually with parental interpretations and restrictions. As the child moved towards the formation of heterosexual relationships, he might find it difficult to reconcile the urgency of his sexual impulses with social restraints and moral imperatives. Attempts at substitute forms of sexual gratification or premature experimentation could be accompanied by anxiety and guilt. He might sublimate and postpone temporarily the urge for sexual expression, or compensate by excessive asceticism and idealism. Adolescent behaviour reflected, on the whole, the strivings of an individual to develop an equilibrium between his reinforced drives and the pressures implicit in his social environment. With an increasing clarification of his goals, he attempted to combine new with appropriate old techniques, to further their fulfilment. Adolescence might proceed in an orderly fashion with a minimum of uncertainty and inconvenience. There might be fluctuations between forward movement and temporary setbacks. The adolescent might regress to earlier accustomed patterns of dependency if the environment seemed threatening or if his personality proved inadequate to increasing demands. Anxiety, depression, morbid introspection and withdrawal into self-imposed isolation could be the forerunner of serious personality disintegration. He might attempt to master his environment by verbal and physical aggression, externalize his feelings, and proceed further to delinquent behaviour. A pattern of avoidance might be utilized to postpone the completion of psycho-social maturation, adolescence being prolonged indefinitely. With increasing intensity and frequency, the adolescent might repeat inadequate techniques, to the detriment of reliable and consistent patterns. On the other hand, he might emerge from the adolescent crisis having achieved satisfying individual expression within the requirements of his social environment.

E. CUNNINGHAM DAX (Victoria), in a paper on the psychiatric problems of adolescence, said that there were many unsolved psychiatric problems of adolescence, and the time was opportune to inquire into the antecedents of adolescent disturbances and the frequency of their occurrence. The differential diagnosis of the psychoses in childhood and adolescence was often obscure, and their symptomatology was in need of description. The electroencephalogram gave much information, but had not yet been systematically used enough. The major psychiatric disorders were of greater frequency and importance in adolescence than had been previously supposed, and

research in that field was likely to yield many discoveries of significance.

W. S. DAWSON (New South Wales), who opened the discussion, said that the special points emphasized by Dr. Sebire were the basis of training, example and attitudes provided by the parents from the earliest years of the child's life and the new adaptations which had to be made in adolescence to a wider social environment, the patterns of reaction to which, however, had already been laid down in earlier years within the family circle. Those patterns were influenced by the degree of anatomical, physiological, emotional and intellectual development—the less harmonious the development of those components of personality, the greater the instability of adolescence. New authorities in the school or university, the foreman and the employer at work, and the official heads of the community, representing law and order, all those to a varying extent shared identifications with the head of the adolescent's family—not necessarily the father. And mothers should note that in British communities one referred to the new Elizabethan age.

Professor Dawson said that one of the special adaptations discussed by Dr. Sebire was the adolescent's need to be accepted by his contemporaries, with the difficulties which might arise when the standards of the young group conflicted with those of the adolescent's home, with resulting strain on his loyalties. There the school, and especially the boarding school, could provide a controlled environment which might be of the utmost value. How different was the lot of the youngster who was allowed to link up with a gang of irresponsibles in his neighbourhood! The blindness and indeed indifference of some parents to the recreational and spare-time activities of their children passed belief. In that connexion one might point an accusing finger at the parents, who while away at work (or at play) left their youngsters without adequate supervision.

The importance of cultural influences had been brought out again in a recent survey in a large English industrial area, where it appeared that delinquency frequently occurred not so much as a basis of defects and deviations within the delinquent's home but as the reflection of the cultural and moral pattern of a whole district, where distorted values were accepted by the child because he knew no other. So long as the individual remained plastic and suggestible, qualities which tended to be less pronounced with maturity, the greater were the possibilities for remedial measures, not only by individual therapy but also by preventive as well as remedial social resources provided by religious, cultural, athletic and other organizations.

Professor Dawson then raised the question of how parents should handle the problem of emancipation, often so difficult under changing economic and cultural values. He said that if they had laid down sound foundations, setting good examples rather than uttering platitudes about proper conduct, the chances were that they would be able to retire into the background of authority, to emerge again only if needed. Some conflict between older and younger generations was natural, but need not be catastrophic. The importance of the family setting, so rightly emphasized by Dr. Sebire, might well be handled by television, while its novelty reunited the family circle and invited the adolescents to spend their evenings at home.

Professor Dawson said that Dr. Sebire had concluded her paper with the observation that adolescence was enjoyed chiefly in retrospect. He would say "should be so enjoyed", for unless it was a period of more or less earnest endeavour, sound character would never be formed. There should be satisfactions from achievements and the surmounting of difficulties rather than a carefree prolongation of childhood. Finally, he would like to quote from William Buchan's "Domestic Medicine", published in 1772. Speaking of mothers, Buchan had said: "It is their province, not only to form the body, but also to give the mind its most early bias. They have it very much in their power to make men healthy or valetudinary, useful in life or the pests of society." Never, Professor Dawson submitted, had it been more important for parents to be both well informed and conscientious.

D. W. H. ARNOTT (New South Wales) said that Dr. Cunningham Dax had done a great service by collecting together for the first time most of the relevant data about a still obscure field of medicine. He had called attention to the fact that only a few children who suffered maternal deprivation suffered permanent mental or emotional warping. He had also called attention to the neglect of work on the possible influence of the father on the children. However, in the present rapidly developing matriarchal society it probably would not matter much anyhow. He had also called attention to the similarity of the symptoms of early schizophrenia and those of adolescent instability, and to the fact that one of the most difficult problems of diagnosis was in deciding when adolescent instability had slipped over the border into schizophrenia. Dr. Arnott confessed that mostly he left it to his clinical intuition to decide the issue. He went on to say that one of the most important influences in steering a child through adolescence was in its opportunity to live equally with its fellows through the particular traditions of its own society. Any deviation generally led to great distress and engendered feelings of lack of confidence and inferiority, which in turn tended to cause emotional inhibition and possible illness of mind.

G. ROSS (New South Wales) asked Dr. Sebire whether there was a greater incidence of adolescent problems in the first child or in children of *de facto* marriages.

Dr. Sebire, in reply to Dr. Ross, referred to the first child. She said that often such a child was the victim of the mother's perfectionism, inexperience and anxiety. With later children the mother was often more confident and capable. Referring to the children of *de facto* marriages, Dr. Sebire said that if the *de facto* relationship was emotionally secure, the children were often stable.

Short-Term Methods of Psychiatry.

G. B. MURPHY (Queensland) discussed short-term methods of psychiatry. He described psychotherapy as the use of any method which would act upon the patient's mind and thereby promote his mental health, and said that the lack of scientific exactness in psychiatry had resulted in the creation of a number of misconceptions. It appeared that faith and hope were the common factors that underlay the various psychotherapies. Each person would develop an approach to psychotherapy which he had found the most effective. The psychotherapies were broadly divided into (i) analytical and (ii) supportive types. In the case of the analytical approach, the therapist aimed to aid the patient in comprehending the source and significance of his symptoms. With supportive treatment, attention was directed towards relief of tension, the maintenance of self-esteem, and the giving of a sense of security. Encouragement and suggestion were commonly used. Hypnosis was an extreme form of suggestion. Hypnoanalysis or narcoanalysis was used for diagnostic purposes, for obtaining some insight into the analytical approach, and also in giving some post-hypnotic suggestion. Group therapy and play therapy had useful places in present-day treatment.

Dr. Murphy went on to say that in the course of treatment it would frequently be found that some factors were more easy to manipulate than others. The therapist should be aware of and attentive to opportunities that would relieve some of the tension-producing factors. The therapist should be on the alert against making the patient too dependent, by the employment of too frequent interviews. To start with one a week and increase the interval appeared to give a moderate degree of freedom. It should be recognized that different degrees of the same illness would be seen in different types of medical practice. The general practitioner was frequently in a particularly favourable position, often seeing the illness in a simple form and at a stage when it was most easily influenced. By the history would be detected those patients with a low threshold for stress. They were best helped by supportive treatment and by adjustment of the environment whenever possible. The tense, intellectual patient could often benefit from the analytical approach, while excessive

tension could often be dissipated by some form of abreaction. The discovery of a family history of psychosis might be a help in the interpretation of abnormal thoughts and behaviour. It was emphasized that there was no specific technique for psychotherapy, but only the simple interpersonal relationship between the doctor and the patient. Psychotherapy could be likened to a form of education, and success apparently depended upon the patient's susceptibility to the warmth and wisdom, medical psychology, and general life experience of the doctor.

DAVID MADDISON (New South Wales), in opening the discussion, said that Dr. Murphy's paper had given him a great deal of pleasure in that its approach to an enormous problem was so completely practical. With the psychiatric climate of the present time so aggressively psychoanalytical, the practitioners of eclectic psychotherapy, like Dr. Murphy and, he would suspect, like the vast majority of the present gathering, still had to press on with their chosen task of bringing relief to the neurotic multitudes—spurned in general by the orthodox analysts, looked at askance by their organically oriented colleagues, and virtually ignored in the main body of the psychiatric literature. The fact, nevertheless, remained that, to whatever degree they were prepared to accept analytical theory, on economic and practical grounds orthodox psychoanalysis, or for that matter any really long-term psychotherapy, gave virtually no answer to the therapeutic problems which confronted the practising psychiatrist. Neither, of course, would any form of drug or physical therapy *per se* provide anything more in the vast majority of cases than temporary amelioration of symptoms; therefore he most earnestly believed that further refinement and development of short-term psychotherapies provided one of the major challenges of contemporary psychiatric practice. At the same time, however specialized the approach and the knowledge of one or other dogma, the therapy stood or fell in the individual case on that indefinable thing, the doctor-patient relationship. Dr. Maddison's own view inclined him to believe that Dr. Murphy was over-generous when he ascribed to almost every practitioner the capacity to carry out adequate psychotherapy. There were perhaps born psychotherapists, but they were rare birds, only to be marvelled at; more certainly there was a small group of unfortunate whose own personality problems were reflected in an overtly hostile or indifferent attitude to the emotional difficulties of others, and for them psychotherapy was best left unexplored. For the large number between those extremes psychotherapy was a skill and art which could be acquired, but acquired only by practice, by the open mind which would examine each small success—and, even more importantly, each failure—to learn the lesson so often contained therein, and, above all, by the capacity of rigid self-criticism and the ability to understand the subtle nuance of the psychiatric interview, the ebb and flow of emotion which occurred when one individual entered into a therapeutic relationship with another. The analysts claimed to solve that last problem by the so-called training analysis; how successful they were had never been, and of course unfortunately never could be, satisfactorily established. Nevertheless it was fundamental to the art of psychotherapy that the doctor should have made himself as familiar as he could with his own personality structure, its strengths and its weaknesses, and should be able to use this information in the management and assessment of the therapeutic situation.

The management of the psychiatric interview was, then, the crux of the situation, and it was good to see a great deal more being written in the last year or two upon that fundamental subject. Every man who had allowed himself to collect that small modicum of information which could be gleaned from each case as it passed through his hands could look back and recall some of his own conspicuous failures in interview technique. It was easy to call to mind the interview which had been a failure because, pressed for time, they had made so many interruptions in an attempt to hasten progress that the patient had completely lost confidence in the genuineness of their expressed desire to hear his tale. Conversely, a session could be pointless and time-wasting if the patient was left without any guid-

ance at all to flounder in a mass of circumstantial and evasive detail. The interview that was too rigidly formal was often a failure, and likewise the hopelessly informal "cosy chat" type of session usually ended by defeating, perhaps for ever, its own purpose. All that was tedious and common knowledge to many of those present, but to the inexperienced the pitfalls were real and dangerous.

Dr. Maddison said that he was glad to hear Dr. Murphy mention the use of drugs. He had repeatedly found intravenously administered "Sodium Amytal" a most useful ancillary aid, much more so than the oft-quoted "Sodium Pentothal" (though that had an undoubted place); the emotional wound could be gently probed and material obtained which could be more thoroughly ventilated at the conscious level. That was a technique which could quite readily be exploited by any practitioner who was prepared to give thought to the matters mentioned previously and who was prepared to learn to recognize and follow up the clues which each patient would leave scattered along his trail. To steer the patient towards discussion of those matters which were laden with affect, and to do so without antagonizing him, was one of the most intricate performances in the whole of medical practice, and yet to fail to do so was virtually to abandon him to his symptoms; in that facet of the technique drugs could be a conspicuous help.

Dr. Maddison said that one final point was, he thought, worth making, and that was to quote from Wilhelm Stekel, who placed himself on record as believing "We are able to cure those patients only for whom we feel sympathy". Dr. Maddison considered that if they could reach a depth understanding of their own motivations, those people whom by that criterion they felt quite unable to help should be very few in number, but they would do well to recognize them and suggest that they should consult another therapist.

Psychotherapy in General Practice.

M. G. JANSEN (South Australia) discussed some practical aspects of an attempt to practise psychotherapy in general practice. He said that the method employed was based on encouragement of free expression, with responses designed to clarify the emotional content. Those responses had a meaning and significance to the patient beyond their verbal content. Practice, experience and awareness of one's automatic behaviour patterns were necessary to develop freedom, ease and variety of response. It was often more difficult to get started in psychosomatic disorders than in neuroses; the patient's feelings about coming to the doctor, rather than the symptom itself, might then be used as the starting point.

The general practitioner had unique advantages in seeing patients at an early stage, and at an opportune time, when emotions were ripe for release. Long interviews were not necessary once therapy had begun. The frequent need to treat simultaneously several patients involved in the same emotional disturbance could create difficulties, but also provided splendid opportunities. Notes, giving the manner of presentation of symptoms, were of great value in forming a long-term review of patients who presented with frequent minor illnesses.

Three patterns in the progress of patients were described. Occasional rapid and dramatic changes showed that a medical diagnosis did not necessarily help in deciding whether patients would be benefited by psychotherapy. Symptom substitution was often seen in those with a long history of illness and could be most disturbing. Progress was frequently irregular, but there were good reasons for allowing the patient to time and space the interviews, according to his own needs.

Dr. Jansen said that, despite difficulties in assessing results, there could be no doubt that psychotherapy had been of immense value to the patients. In early or acute nervous illness it prevented the development of a fixed neurotic response as well as curing the symptom. It had cured many disorders that had resisted other methods of treatment; failures in therapy could usually be traced to errors in technique. In addition, the physical health of

the whole family often improved with that of the patient. A temporary adverse reaction had been shown by the community generally to the psychosomatic approach, but that had eventually passed. Hypnosis was used occasionally and had not met with undue opposition or prejudice.

In conclusion, Dr. Jansen said that the biggest difficulty facing a doctor endeavouring to practise psychotherapy in general practice was himself. A fairly radical change in his approach to patients was required. The change from a complacent prescribing of placebos, reassurance and advice to a simple but radical psychotherapy had been amply rewarding.

H. OWEN CHAPMAN (New South Wales), in opening the discussion, said that two years earlier he had published in *THE MEDICAL JOURNAL OF AUSTRALIA* an article based on a study of the neurosis found during three years' *locum tenens* work in every kind of general practice in New South Wales. That established an incidence of at least 8% of that disease, the extreme urgency of the problem, the patient's eagerness and gratitude for real treatment, and a tentative indication that a good many patients could be cured effectively and quickly in the routine of general work. But owing to the obvious limitations on the work of a *locum tenens*, it could not blaze the way to a solution of the problem. Dr. Chapman said that his concluding sentence was as follows: "It is to be hoped that there may be others who can report on a steady, uninterrupted and therefore more successful series of cases in their own practice." Of the doctors who had written to him about the article there was only one general practitioner who was actually doing that work, and that was Dr. Jansen, who had been developing it for several years in a small one-doctor town in the South Australian countryside. A year later he published in the journal his preliminary report on "An Approach to Neurosis in General Practice".

Dr. Chapman said that he knew that many discounted his report with the statement that: "It is all very well for a *locum tenens* to play around with the neuroses he finds; but if he had to run the practice himself he'd soon find that sort of thing quite impracticable." However, there was Dr. Jansen actually doing the work in the midst of all a general practitioner's multifarious duties, and doing it successfully. Dr. Jansen's paper had aroused much more interest. It reported a solid concrete achievement, which could not be explained away. It showed in detail how it had been achieved; it challenged others to check up on his findings. Dr. Chapman went on to say that in the year that had elapsed since then Dr. Jansen had made a number of contacts with doctors in Australia and England, had read widely and, most important of all, had made good use of his opportunities by comparing his experience with that of others. Thus in the paper that Dr. Jansen had read at that meeting, he had presented a much more mature exposition of the work. Dr. Chapman said that the paper was an intensely human and convincing account, but he would like to emphasize especially not the details of technique, but its general significance, and to suggest that it marked the beginning of a new phase of psychiatry in Australia. Psychiatry had been very interesting and exciting in the last few years, as pioneer psychiatrists had developed one after the other the use of the new epileptic drugs, the lithium salts, succinic acid, prefrontal leucotomy and now chlorpromazine and "Serpasil"; but the outstanding pioneers of the next few years were not going to be the psychiatrists, but those general practitioners who, like Dr. Jansen, really seriously tackled that challenging and hitherto hopeless problem of the mass of neurosis in the population. It disabled many times more people than all the psychoses put together, and it could no more be dealt with by the specialists in psychiatry than could the routine surgery of Australia be carried out by the specialists in surgery or the midwifery by the obstetricians. One might just as well talk about running an army medical service by the medical officers in the base hospitals, when everybody knew that its foundation was in the casualty clearing stations, the field ambulances and the regimental medical officers. Dr. Chapman said that he knew that it sounded fantastic that general practitioners should seriously and effectively treat the patients suffering

from neurosis in their busy practices, but that paper was a report and a demonstration of work that had actually been done, and that was improving year by year. He asked those present where were its fallacies. It could be refuted only if one checked over Dr. Jansen's methods again and proved that they did not in fact give the results that he claimed. There was no doubt that many doctors were temperamentally unsuited for that work, just as many were hopeless at orthopaedic work; but that fact did not free from obligation and duty the considerable number who were temperamentally suited for it, and who, if they would face its implications, could do it very well. Dr. Jansen had made no secret of its difficulty and of the discipline that calling imposed on all who followed it. There was no question of the general practitioner's having to undergo two years' training analysis. Watts in England, Jansen in Australia and many others had shown that, given the will to persevere with it, a suitable doctor could do excellent and successful work within the limitations of his own general practice.

Semantics and Psychiatry.

DOUGLAS N. EVERINGHAM (New South Wales), in a paper entitled "Semantics and Psychiatry", said that semantics was more than the science of meaning; it was the art of clear thought. Philosophers had argued over word meanings since speech had begun. In 1933, Korzybski, the pioneer of general semantics, had grouped together terms referring to concrete phenomena (referents)—for example, a sheep. His next stage of abstraction comprised terms referring to sensory impressions of those phenomena (percepts)—for example, the appearance of a sheep. The third level of abstraction was made up of names of categories in which the original phenomena were included (concepts)—for example, sheep in general, mammals *et cetera*. Further abstractions allotted to that category various attributes—for example, woolly or white. As Bliss had stressed, the prior experience of no two minds was the same; so the attributes of the sheep would be differently viewed by, and the qualities of sheep in general would vary for, different observers.

The attributes were often mistaken in common parlance for the basic concept. But while such confusion or abstraction levels caused much misunderstanding, worse confusion resulted from the widespread use of terms which embodied complex attributes—for example, such a term as "Nazi". Misunderstanding was the basis of most psychopathology and social pathology, which were increasing problems in medicine.

Dr. Everingham went on to say that Bliss had reduced Korzybski's levels into three types of meaning elements of all terms, referring respectively to objects, events (both recordable by photographs) and mental evaluations. The last group was the source of all misunderstandings.

Dr. Everingham referred to the important part that science could play in the reframing of speech along more satisfactory lines and examined the semantic aspects involved in the standardization of psychiatric terms.

Cordotomy and Leucotomy in the Relief of Intractable Pain.

J. L. DOWLING (New South Wales) said that the problem of pain and its relief was an ever-present one, as it was a symptom of so many diseases. As such, its relief resulted from cure of the causative illness; but when pain assumed an intractable quality, its relief became of prime importance. It was especially prone to become intractable in the presence of malignant disease, but might also be associated with non-malignant, chronic conditions. When all conservative methods to relieve pain had lost their efficiency, operative measures might be indicated. Two of the better known operations of that nature were cordotomy and leucotomy, both of which had considerable value in the appropriate case.

The term cordotomy referred to section of the spinothalamic tracts in the spinal cord, a procedure which produced analgesia and thermæsthesia of the opposite side of the body, but left the sense of light touch intact, since

fibres conveying that sensation travelled also in the posterior columns. If the operation was to relieve pain successfully, it was essential to render analgesic the entire area in which pain was felt, and that involved a deep cut into the cord at a level far higher than the actual level of pain. That was doubly important because it was an invariable occurrence for the upper limit of analgesia, as demarcated immediately after operation, to sink to a lower level after the passage of two to six weeks. If that recession allowed a recurrence of sensation in the painful region, even though it remained hypoaesthetic as opposed to analgesic, pain would again be experienced and the operation was a failure. It was advisable to carry out cordotomy at a relatively early stage of the pain of malignant origin, particularly if the operation needed to be only unilateral; because once pain of that nature had commenced, it was unlikely to get better with conservative treatment, and it should not be left until the patient was cachectic. It must be remembered that cordotomy was prone to cause bladder and bowel dysfunction as an unavoidable side-effect, and that might become permanent in about one-quarter of the bilateral cases.

Prefrontal leucotomy did not relieve pain as a physical entity, but alleviated much of the suffering that accompanied it, so allowing those with advanced cancer a considerable degree of comfort at the end of their lives. The unilateral operation had great value when the pain was of organic origin, because it caused virtually no mental change and usually persisted long enough to ensure comfort until death. It was of no use in conditions which were not fatal, because its benefits were only temporary. Bilateral leucotomy caused such severe mental deteriorations in some patients that its use was not advised except for patients in extreme degrees of pain, or for those with pain of an obsessional nature amounting to a psychosis.

In summary, cordotomy was the operation of choice in dealing with pain of organic origin below the level of the first thoracic dermatome, whereas leucotomy should be reserved for those cases in which other operative methods

could not be used, either because of the patient's advanced cachectic condition or the situation of the pain. Otherwise, it was of use to relieve pain of an obsessional nature.

G. VANDERFIELD (New South Wales), who opened the discussion, said that the choice of the subject was pleasing, as he did not believe that in Australia sufficient use was made of the pain-relieving procedures advocated by Dr. Dowling. Not only that, but when they were indicated, the need for earlier performance was reported. Dr. Vanderfield went on to say that the features which would lead to the preference for each operation had been mentioned. Understandably, cordotomy was more suitable when the patient's general condition was satisfactory and a high enough level could be secured. The result could make a remarkable difference to the patient, as in one case which Dr. Vanderfield quoted. However, when the pain was widespread and expectation of life was short, leucotomy, preferably prefrontal lobotomy, was usually sufficient. It left very little if any undesirable change in the mental state, and the patient and his family were grateful for the change from the previous desperate and distracted condition. Scarff, of New York, had reported a series of 60 cases, in two-thirds of which the results had been successful, and careful psychometric testing had not shown any changes in the mental state following unilateral operation. Dr. Vanderfield said that one statement made by Dr. Dowling should be stressed again: that was the need for a very careful evaluation, so that it was certain that the pain could not be controlled by simpler means. Sometimes also Dr. Vanderfield had observed that pain associated with malignant disease settled in any case, presumably because the nerve plexuses involved had been completely destroyed.

IAN MARTIN (Victoria) asked Dr. Dowling how many patients when given the choice preferred the undesirable results of leucotomy or cordotomy to their pain.

Dr. Dowling, in reply, said that very few patients refused the operation.

Section of Obstetrics and Gynaecology.¹

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President's Address.

GEORGE SIMPSON (Victoria) took as the subject of his president's address "Normal Childbirth". He said that the subject had been selected because of the tendency to neglect the normal, which was the real aim in all obstetric management. A definition of normal labour included ten characteristics. It was difficult to attain, and could, from the mother's point of view, be unsatisfactory. The subject was the less scientific one of normal childbirth, in which the end results might justify the inclusion even of a case of Caesarean section. The foundation of normal childbirth was laid in ante-natal care, which covered minor as well as major departures from normal. Anemia in particular was the cause of much debility and many complications. The remedy was simple. The problems of rubella and Rh

incompatibility were discussed freely in the lay Press, but doctors should explain the true implications. The diagnosis of rubella should be established. Relaxation exercises helped to ensure good health and normality. The ante-natal period should be pleasant and healthy. The expectant mother should have complete confidence in herself, and in her doctor and hospital, and should await her call to hospital with eager expectancy. The problem of post-maturity was a real and difficult one. A certain method of induction of labour would be a great advantage. The golden rule in antenatal and labour management was "watchful expectancy". The obstetrician must work along with Nature, and must understand the physiology and mechanism of normal labour. Careful observation would show when first things departed from normal, and at that stage correction was easy. There was no difficulty in obstetrics that one could not get out of, provided one did not get too deeply into it. Labour wards should be made more cheerful and friendly. The midwife should be encouraged to play a more active part in the conduct of

¹The meetings held by the Section of Obstetrics and Gynaecology with the Section of Paediatrics, the Section of Ophthalmology, the Section of Anaesthesia, the Section of Neurology and Psychiatry, and the Section of Medicine and Experimental Medicine have already been recorded.

labour. Grantly Dick Read's teaching of "natural childbirth" had influenced every labour ward. The question of anaesthesia and analgesia was an important and a changing one, but the conduct of the third stage was now most satisfactory.

Dr. Simpson went on to say that in the conduct of labour there were certain well-established rules which would ensure normal childbirth. Most of the major calamities developed from simple beginnings or minor errors in management. There was drama in dealing with a major calamity, but real satisfaction in a simple move which averted it. The patient expected normal childbirth, and when it had been achieved was not interested in details of the process. Meddlesome midwifery, episiotomy and forceps and breech delivery were allowed in normal childbirth. The "labour of the obstetrician" should be given more consideration, and his lot made easier by consultation in difficulties, group practice, concentration of patients in one hospital, careful management of his labours and greater use of the telephone. The paediatric physician in the neonatal period helped greatly in present-day obstetric practice. In the post-natal period there was a need for greater "mothercraft". Early ambulation and rooming-in had altered the puerperium and required altered design in new hospitals. Rooming-in eliminated nursery skin, eye and intestinal infections. The economics of normal childbirth should be given more consideration. In Melbourne in 1924, and in England in 1928, committees had been appointed to investigate and report on obstetric problems, and introduced the new era. In 1954 Professor Lance Townsend was able to report on the great change between the obstetrics of the present and the obstetrics of the past. The achievement was due to all obstetricians, particularly to general practitioners, who would always be responsible for the bulk of obstetrics, and whose aim was that every mother should be safely delivered of a normal baby which she could rear in health and happiness—normal childbirth.

Indications for Caesarean Section.

S. DEVENISH MEARES (New South Wales) read a paper entitled "Indications for Caesarean Section". He said that Caesarean section should be considered only when pregnancy or labour had ceased to be physiological, and that there were therefore added to the risk of operation the risks due to the pathological condition present. The maternal mortality after Caesarean section was 0.4 per thousand; the infantile mortality rate was 8.5% including all cases, and 4.3% if *placenta previa* was excluded. A decline in fecundity followed Caesarean section, and the results of the operation itself (uterine scarring) constituted the main indication for subsequent Caesarean section.

Dr. Meares said that one of the main indications for the operation had been preeclamptic toxæmia, and that a decline in the incidence of that condition had led to a decrease in the numbers of sections being performed; in the last four years only four Caesarean sections had been performed at the Women's Hospital, Crown Street, Sydney, because of preeclamptic toxæmia. Patients with a true conjugate of more than 8.4 centimetres should be given a trial of labour; among those whose labour lasted over twenty-four hours, the Caesarean rate was 26.5%. Labour lasting over forty-eight hours was dangerous to the child. Caesarean section was not indicated in an elderly *primipara* just because she was elderly. No matter what the indication, labour should not be induced surgically unless it was possible to perform Caesarean section if the labour did not commence within seventy-two hours. Partial contraindications to Caesarean section were death of the fetus, gross sepsis, gross malformation of the fetus and prematurity.

Trends Overseas in Obstetrics.

B. T. MAYES (New South Wales) read a paper entitled "Trends Overseas in the Management of Three Obstetric Problems". He said that in connexion with repeated Caesarean sections, the trend in the United Kingdom and Elre was to avoid repetition, and that provided the same

indication for the operation was not still present, patients should be given a trial labour, provided they were in a well-equipped hospital with an operating theatre close to the labour ward.

Speaking of *placenta previa*, Professor Mayes said that localization of the placenta made all the difference; really first-class X-ray equipment operated by an enthusiast was necessary; soft-tissue radiation showed the placenta very well. Macafee had laid down that conservative management of ante-partum hæmorrhage was necessary, vaginal plugging should be discontinued, version should be reserved for the rare cases of severe bleeding in a *multi-para* with a very premature baby, and when artificial rupture of the membranes did not control the bleeding a Caesarean section should be performed. A high Caesarean section rate was accompanied by a low infantile and maternal mortality rate.

Finally, Professor Mayes said that he had come to believe in post-maturity as an entity, perhaps associated with senility of the placenta, and associated at times with fetal anoxia. He believed that a fetus could remain *in utero* for longer than was good for it, but on the other hand there could be a danger in unnecessary induction of labour if that principle was given too much consideration.

H. C. CALLAGHER (Western Australia) asked what was the difference between the figures for rupture of the lower segment scar and those for rupture of the classical scar. Dr. Callagher also asked how the incidence of rupture of the vertical lower segment scar compared with that of rupture of the transverse lower segment scar.

Professor Mayes, in reply, said that at the Women's Hospital, New York, in the period 1951-1952, ruptures of the classical scar were twice as frequent as those of the lower segment scar. Professor Mayes also said that the incidence of rupture of the vertical lower segment scar was greater than that of rupture of the transverse lower segment scar.

Dr. Simpson, from the chair, said that good placentography was possible in any radiological unit with proper fixation of the patient on the table, which prevented even movements of the fetus.

Adequate Ante-Natal Care and the Prevention of Eclampsia and Severe Toxæmia.

T. DIXON HUGHES (New South Wales) read a paper on ante-natal care in the prevention of eclampsia and severe toxæmia. He said that it was not a difficult matter to summarize the result of an attempt at adequate ante-natal care, which, briefly, showed that prior to the institution of more rigid ante-natal care the incidence of eclampsia was one in 400 cases at the Women's Hospital, Crown Street, Sydney, and in the last 20,637 booked patients it was one in 5000; in other words, the incidence was twelve and a half times less than before the attempt. That was not the complete story, because in 1947 the incidence of severe toxæmia was twice as great as at the present time, and the term "severe" more aptly described the condition at that period, when it was often associated with marked albuminuria, the urine albumin content being "three-quarters" to "solid". That improvement in its turn had helped to lower the premature neonatal death rate. Previously a greater proportion of babies were very premature, and the majority weighed under five pounds; now there were fewer infants on the borderline of viability, and the majority of premature babies now weighed over five pounds. That reflected the fact that at least in toxæmia the mothers were being carried nearer to term with bigger and healthier babies.

Discussing the means by which the results had been obtained, Dr. Dixon Hughes said that the very essence of success was adequate ante-natal care, which was mainly attention to detail and regard for those points which had been aptly described by Sir Bernard Dawson as being disregarded because of their apparent insignificance. The important thing was the proper evaluation of blood pressure—appreciation of the individual rise in the diastolic pressure, and constant consideration of how much that

particular patient's pressure had risen, in the belief that a five to ten millimetre rise in the diastolic pressure from the patient's own original figure was worth revaluing within seven days. Dr. Dixon Hughes said that he had found many patients quite ill by the time a diastolic pressure of 90 millimetres of mercury had been reached, because their original figure was only 60 millimetres. Weight should be carefully checked, and any sudden increase regarded as a possible sign of the onset of toxæmia till proved otherwise; but it was also appreciated that a small percentage of patients might develop toxæmia without an appreciable gain in weight. The appearance of albumin in a catheter specimen of urine from a healthy patient was regarded as a late sign. Above all, a patient should be examined as often as her condition warranted it, as demonstrated by her blood pressure, her weight gain or any other sign, and not by a set routine that shut its eyes to those insignificant signs. Her diet should be adequate and well balanced, and she should be cared for and protected from her own foolishness in not visiting her medical attendant so that he might note any change. Therefore the medical attendant or the institution should act as a parent and see that the wayward one was sought out and not allowed to contribute to her possible death, and above all, be ever vigilant.

J. W. JOHNSTONE (Victoria) said that after he had listened to a paper for specialists in Sydney by Dr. Dixon Hughes four years previously, it had been decided to put into operation at the Royal Women's Hospital, Melbourne, the intensive ante-natal methods of supervision which were recommended. The previous incidence of eclampsia in booked patients compared so unfavourably with that reported, that some did not recover from the shock until Professor Mayes recently pointed out that the overall State mortality in Victoria was less than that in New South Wales, and that the mortality in the Dominion of New Zealand had for long been much lower than both. Dr. Johnstone said that over the last three years in Melbourne there had been a considerable decline in the incidence of eclampsia among booked patients, but the decline was still very much behind what Dr. Dixon Hughes had shown. In spite of that, the disease seemed milder, and there was no mortality over the last four years. In fact, only ten deaths had occurred since 1939. The factors in the decline could be attributed to more intense ante-natal supervision and to the provision of a high ratio of ante-natal beds. Other factors, which had to be considered because they were introduced simultaneously, were the effects of relaxation and psychological interest in the patient as a whole and the saving of blood at the time of labour by ergometrine. Those measures not only reduced the incidence and severity of the condition, but seemed to introduce a new element in the form of the relatively benign post-partum single convulsive seizure. Statistics in the hospital showed that the ratio of convulsive seizures before and after delivery had been altered from over six to one to nearly equal; in other words, if the single post-partum convulsive seizure could be eliminated, the results would be twice as good. With regard to differences between the two hospitals, Dr. Johnstone said that it had to be considered whether there was any geographical difference in incidence. That seemed hardly likely, although those going to Great Britain would notice a great difference between the London and Glasgow areas. Other factors could be differences in hospital selection of patients, or in the system of recording cases as booked or non-booked. Dr. Dixon Hughes had a minimum of 13 attendances among patients examined early; but Dr. Johnstone was sure that the method of recording in Melbourne included a number of patients examined only late in pregnancy. He thought that the methods of treatment produced no difference between the two places. The great benefit to the patient of a monument of organization had been shown clearly by figures. Dr. Dixon Hughes, in his paper, had shown the circumstances under which the reduction occurred, rather than the method of affecting the patient. There was really nothing new, as the effects of rest, appropriate diet, water and electrolyte retention, attention to weight and relative rise of blood pressure were well known. It did not seem

that it was just a matter of early induction of labour, or of saving more patients from convulsive seizures by a higher incidence of perinatal fetal wastage. It seemed significant that the incidence of severe toxæmia in the private practice of specialists and in New Zealand was low compared with the incidence in public clinics. Perhaps some factors in the interpersonal relationship between the attendant and the patient operated at the hypothalamic level, whereby the patient was benefited by the extra interest in and attention to her safety.

R. HAMLIN (New South Wales) expressed his disappointment that the efforts made at the Royal Women's Hospital, Melbourne, to reduce the incidence of eclampsia in booked cases had not achieved greater success. He suggested that the attack on preeclampsia had had effects on the reduction of ante-partum convulsions, but unexpected post-partum convulsions were still occurring. Dr. Hamlin quoted a case of eclampsia in which no warning at all had been given by a rise in blood pressure or the appearance of albuminuria before the convulsions, whereas the weight gain between the twentieth and thirtieth weeks of pregnancy had been an obvious warning sign. Dr. Hamlin said that all signs—weight gain, oedema and blood pressure changes—must be watched in an antieclampsia campaign.

H. M. CAREY (New Zealand) said that salt restriction was an effective way of preventing preeclampsia, but once oedema had developed one had to go further and produce salt elimination. Bed rest was effective, as it increased the renal excretion of sodium. "Diamox", the carbonic anhydrase inhibitor, promoted renal sodium excretion; but as it also increased potassium and carbonic acid excretion, it should be given only on alternate days. If the condition was refractory to that treatment, it could be controlled by pure ammonium ion exchange resins given for two days in maximum dosage. That type of resin was more effective than the resin mixtures at present available on the market. Constipation must be avoided when ion exchange resins were given.

Professor Carey went on to say that sodium depletion arrested preeclampsia, but did not cure it, and had little effect in reducing hypertension. Thus hypotensive drugs should be given at the same time. The action of "Ansolyse" was dependent on posture, and presented a difficult nursing problem during late pregnancy. The side effects were not completely controlled by pilocarpine given by mouth. "Apresoline" frequently produced troublesome headaches, and tolerance usually developed so quickly that it was useful only for short-term therapy. Reserpine by itself was of little value, having mainly a sedative action and only a mild hypertensive effect. Combined with protoveratrine it had a synergistic effect, and the combination was the most promising hypertensive treatment at present available. Professor Carey asked whether cases of so-called "dry preeclampsia" were not cases of essential hypertension. He went on to say that electroencephalographic examination was important in investigating cases of suspected eclampsia in which there was minimal elevation of the blood pressure, or weight gain. Many cases of eclampsia of that type proved to be due to neurological causes. Professor Carey finally referred to a natural experiment which was going on in Fiji, where there was a low incidence of preeclampsia in the village Fijian, but a high incidence in the Indian population. However, the incidence among Fijians increased when they lived in the towns in European fashion. Professor Carey asked whether there was any explanation of that fact.

Ætiological Factors in Premature Labour.

G. SHEDDEN ADAM (Queensland) discussed ætiological factors in premature labour. He said that the reduction in maternal mortality during the last decade had presented a fresh challenge, that of achieving further reduction in the neonatal death rate. Because of the consistently high contribution made by prematurity to neonatal mortality (50%), and because the care of the premature infant, at least in the larger centres of population, was of a high standard, any appreciable reduction in infant loss through prematurity called for a careful review of the whole sub-

ject of premature labour as an obstetrical problem. Such a review should include: (a) a study of the supposed causes of spontaneous premature labour; (b) an assessment of the management of those conditions which might lead to the necessity to induce labour prematurely; (c) a study of maternal factors which, in the event of premature labour, might adversely influence the subsequent prognosis for the infant. Professor Shedden Adam said that with that object in mind, the case records of 1186 instances of premature labour occurring at the Brisbane Women's Hospital between 1950 and 1953 had been studied. In common with other surveys of a similar nature, almost half the premature labours had commenced without any obvious cause being present. It was in regard to that category that further investigation was needed. Supposed aetiological and predisposing factors included fragility of membranes, lack of tone of the internal os, impaired uterine growth response, social and economic disabilities, nutritional deficiencies, previous underweight condition of the mother, anaemia and possibly emotional tension.

Whilst it was obvious from the work of Baird and others that sociological factors tended to determine the incidence of spontaneous premature labour, dogmatic statements in regard to the role of nutritional deficiencies were probably without firm foundation. Large-scale surveys on the effect of a major reduction in the national dietary in post-war Europe failed to provide consistent evidence to support such a belief. A more significant factor might be the influence of insufficient rest, as well as duties and demands out of proportion to the capabilities of the mother.

Professor Shedden Adam then said that the sociological aspects of spontaneous premature labour and of infant wastage through prematurity due to multiple pregnancy might well engage the attention of a university department of social studies. Medical measures directed towards the prevention of recurrent spontaneous premature labour tended to be empirical, and results might be disappointing. Nevertheless a patient who exhibited the hypogonadal syndrome, and who conceived after a period of infertility, only to lose her baby through prematurity, might be regarded as exhibiting deficient uterine growth response, and should receive adequate replacement therapy with the ovarian hormones in any subsequent pregnancy. Any reduction in infant loss through prematurity consequent upon pregnancy toxæmia would come about only as the need for induction of premature labour in such cases became less frequent, or at least could be deferred until the degree of prematurity was minimal. That that could actually be accomplished had been shown by the staff of the Women's Hospital, Crown Street, Sydney; they, in a campaign to eliminate eclampsia, succeeded also in greatly reducing the incidence of preeclampsia, with beneficial results in terms of infant loss through prematurity. Postponement of induction of labour for pregnancy toxæmia might be made possible by the judicious use of ion exchange resins, and there now appeared to be a greater possibility of finding a safe and effective hypotensive agent for the control of essential hypertension complicating pregnancy.

Professor Shedden Adam went on to say that on an average one premature birth in eleven such births was due to some type of ante-partum hæmorrhage. Accidental hæmorrhage was responsible for almost twice as many premature births as *placenta prævia*. That was due in part to the greater use of "expectant" measures in the care of women who showed evidence of low implantation of the placenta, but in whom the fœtus was still of doubtful viability. A further reduction in prematurity from that source might result from radiological aids to the early diagnosis of *placenta prævia*. The role of multiple pregnancy as a cause of premature labour was remarkably consistent in published figures from a variety of sources, being the cause in an average of 14% of the series studied. It was thought that there was a sociological problem there, and that in the absence of domestic assistance there was much to be said for the admission to hospital of mothers of twins between the thirty-second and thirty-fifth weeks of gestation.

Referring to the series of premature labours analysed in his paper, Professor Shedden Adam said that it demonstrated that 95% of such labours resulted from either no known cause (43%), or from one of the three major aetiological factors of toxæmia, hæmorrhage and multiple pregnancy (52%). The impact of any remaining aetiological factors on the incidence of premature labour must therefore be slight. Factors of declining significance in the light of modern practice and therapy included cardiac disease in the mother, syphilis, pyelonephritis and potential erythroblastosis. Fœtal abnormalities made up 3% of the premature births, hydramnion 1%, intercurrent infections 1.5%, trauma 1.2% and fibromyomata 0.5%. Maternal conditions which, in the event of premature labour, would adversely affect the prognosis for the infant were, in order of importance, accidental ante-partum hæmorrhage (14% mortality), habitual premature labour, preeclampsia and *placenta prævia*. The best chance of survival of the fœtus followed spontaneous premature labour, not habitual, and not preceded for any length of time by ruptured membranes (7% mortality).

G. SIMPSON (Victoria) said that it was right that every effort should be made to reduce fetal wastage, and consideration should be given to every factor responsible, even if the loss was a very small percentage. Professor Shedden Adam's paper had clearly shown what a complex problem they had to deal with in that one item of prematurity. In some cases premature labour happened, in others it was caused by obstetricians. Some practical points could be applied at once; most of them were included under thorough ante-natal care. The patients' hæmoglobin levels should be kept up with iron or folic acid. Home help should be available in cases in which it was needed. Twin pregnancy should be regarded as a qualification for the patient's admission to hospital in the last six weeks; that had been accepted at the Royal Women's Hospital, Melbourne.

Dr. Simpson went on to say that much had been done by the paediatricians to reduce the danger of prematurity. The "Isolette" and the Australian-made "Both" incubator cot had meant a great advance; but that did not absolve the obstetrician from his great responsibility in seeing that the mother and the paediatrician were handed a baby having the best possible chance of survival.

Intravenous "Pitocin" Therapy in Obstetrical Practice.

H. M. CAREY (New Zealand) read a paper on the intravenous use of "Pitocin" in modern obstetrical practice. He said that intramuscularly administered "Pitocin" and dihydroergotamine frequently failed to induce labour. A technique in which "Pitocin" was given intravenously and monitored had been used in 169 cases. In 126 of those the intravenous drip administration of "Pitocin" was preceded by rupture of the membranes and proved to be 98% successful. In 27% of all cases of artificial rupture of the membranes, labour had not been established or was unsatisfactory eighteen hours later. This residual 27% comprised 102 of the 126 cases previously referred to, and after an average of nine hours of intravenous "Pitocin" administration all but three of the 126 patients were delivered vaginally.

The assistance of "Pitocin" given intravenously was required by 23 *primiparae* and 25 *multiparae*—37% of patients whose membranes were ruptured in order to induce labour because of preeclampsia or hypertension. All those who received that combined treatment were delivered vaginally. No significant rises in blood pressure occurred, and an "unripe" cervix was no obstacle to the success of the technique.

Professor Carey said that when diagnosis of post-maturity was based on adequate clinical and radiological evidence, the disorder carried a 5% fetal risk. Provided the intravenous administration of "Pitocin" was controlled by a satisfactory method of tocography and combined with the intraamniotic administration of antibiotics, it carried a fetal risk of less than 1%. It was thus justifiable to induce labour when a woman was two weeks past term. Of *primiparae* with post-mature fœtuses, 32%

failed to go into labour within an average of twenty-seven hours of artificial rupture of the membranes. After that delay, 20 patients were treated with "Pitocin" given intravenously for an average of thirteen hours, and 17 of them were delivered vaginally. The remaining three patients were delivered by lower segment Caesarean section. The three failures were due to the following causes: (i) a rigid cervix associated with adequate uterine activity as gauged by the tocographic record; (ii) the development of an intolerance to "Pitocin" given intravenously; (iii) foetal distress developing during the temporary suspension of a drip administration of "Pitocin", which had run intermittently during three preceding days, and which had dilated a long closed cervix to four centimetres. Live babies were secured in all cases.

Professor Carey went on to say that an average of nineteen hours after artificial rupture of the membranes elapsed before "Pitocin" was used intravenously to initiate labour in *multiparae* with post-mature foetuses. Only 9% of the total patients in this category required the combined treatment, and vaginal delivery was effected by an average of eight hours of intravenous "Pitocin" administration. *Multiparae* with diabetes and pre-diabetes, minor degrees of *placenta previa*, and one with a foetal abnormality who had not gone into labour shortly after artificial rupture of the membranes, had been delivered vaginally with the help of "Pitocin" given intravenously. Patients admitted to hospital because of an intrauterine death were brought into labour without rupture of the membranes, and one patient with a hydatiform mole was successfully treated with "Pitocin" given intravenously. With breech deliveries, adequate uterine activity was essential for a favourable outcome, and in five cases the uterine activity was augmented by "Pitocin" given intravenously. Many patients who had undergone trials of labour came to Caesarean section because of inadequacy of the uterine activity. In the present series only those who had undergone trials of labour which failed for mechanical reasons reached the operating theatre. Nine patients with "inertia" were successfully treated by "Pitocin" given by the intravenous drip method.

Professor Carey, in conclusion, said that the intravenous employment of "Pitocin" with adequate monitoring had reduced the incidence of Caesarean sections and liberalized the indications for the induction of labour owing to the safety and certainty with which uterine activity could be controlled.

Uterine Inertia.

T. M. A. JEFFCOATE (United Kingdom) read a paper entitled "Uterine Inertia". He said that the term "uterine inertia" had given rise to widespread misunderstanding and misdirected treatment. The disadvantage of the term was that it suggested that uterine inefficiency was the result of inactivity, whereas it more often represented a qualitative than a quantitative failure. The expulsive power of the uterus might become ineffective at any time in labour, and there was little scientific justification for the old concept of primary and secondary inertia.

Professor Jeffcoate described the normal functioning of the uterus during labour, and contrasted with it the abnormalities that could occur. In hypotonic inertia the capacity of the lower segment of the uterus to dilate was adequate, but the expulsive effort was weak, so that the patient had little or no pain, and the placental circulation was hardly affected. When the lower segment and internal os were hypertonic, and the upper segment contracted weakly (the condition of reversed polarity), the patient would have severe low backache and a prolonged labour. In the absence of all polarity, the colicky uterus suffered strong but purposeless general contractions, and the patient had constant, frequent abdominal cramps. Constriction ring dystocia was an end result of reversed or absent polarity; it had to be distinguished from the Bandl's ring of obstructed labour, which occurred only when polarity was normal. Asymmetrical uterine action, so long as polarity was normal, did no real harm, but in conjunction with abnormal polarity it might account for the one-sided

pain often described as a feature of colicky uterus or constriction ring dystocia. In cervical dystocia, polarity and uterine activity were normal, but the hard fibrous external os failed to open.

Professor Jeffcoate said that the various treatments for correcting faulty uterine action were most disappointing. Accurate diagnosis was the first essential. When labour was prolonged, hospitalization was obligatory. Posterior pituitary extract had fallen into disfavour; but if it was used only when the uterus was hypotonic and truly inert but possessed normal polarity, and was then given by slow intravenous drip infusion in a solution of 1:2000, it could be most useful. The treatment of incoordinated uterine action consisted in relieving pain, exhaustion and anxiety with analgesics, the best of which were morphine and pethidine, and in reducing spasm and hypertonicity with antispasmodics. Morphine or pethidine might also perform the second function; dihydroergotamine, first popularized in Sydney, had later been shown to be oxytocic in its action; hydergine had also been shown to be oxytocic, and to have no effect in promoting dilatation of the cervix. Oestrogens had proved to be useless. Caudal anaesthesia had been reported as very useful.

Professor Jeffcoate said that once the cervix had become fully dilated, and there was no disproportion, forceps delivery was the solution. If the need for immediate delivery became apparent before dilatation of the cervix, cervicotomy followed by forceps delivery had been advocated, but was indicated only for true cervical dystocia; in the majority of cases Caesarean section was the correct procedure.

Professor Jeffcoate summed up by saying that inertia was not significantly related to overstretching of the uterus by twins or hydramnios, or to disease of the uterine wall, nor did multiparity play a part. The majority of *multigravidae* diagnosed as suffering from hypotonic inertia were not in real labour. Uterine inefficiency, especially of the hypertonic variety, was essentially a condition of the *primigravida*; it was often caused by a minor degree of disproportion, particularly associated with a posterior or transverse position of the occiput or with a large foetus.

BRUCE WILLIAMS (New South Wales) said that when labour was prolonged the case must be reassessed, and the *accoucheur* must decide the best method of treatment and delivery. There was no single method of treatment, and as Whitridge Williams had written when discussing *placenta previa*, the obstetrician who could assess the case correctly would get the best results. Professor Jeffcoate had followed the same theme when he made the following statement: "How often has uterine inefficiency been blamed for dystocia when the real cause is a minor degree of contracted pelvis, some fault in the foetus, e.g., P.O.P., face presentation or an oversized babe." The method of reassessing the case was by a careful vaginal examination or an intranatal radiographic examination.

Discussing treatment, Dr. Williams said that the best results with morphine or the B Hyoscine Compound were obtained if an anaesthetic rest was given before the drug was injected. Professor Jeffcoate favoured the intravenous administration of pethidine by the continuous drip method as a sedative, in a dose of 300 milligrammes of pethidine to one litre of glucose saline solution, and he had said that 600 to 800 milligrammes of pethidine could be given in twenty-four hours. For antispasmodic treatment, "DHE-45" could be given intramuscularly in a dosage of 0.25 milligramme every four hours if necessary. It had given good results. Dr. Williams said that Professor Jeffcoate had stated that "DHE-45" was oxytocic in action, not antispasmodic; he himself was not concerned with that, but it gave good results when injected intramuscularly. He had not given it intravenously. If labour had been in progress for longer than thirty-six hours, antibiotic "cover" should be given, as the foetus was in danger and infection of the mother might occur.

Referring to uterine stimulants, Dr. Williams said that "Pitocin" was given by the continuous intravenous drip method, in a strength of one cubic centimetre of "Pitocin"

to 1.5 litres of 5% glucose solution. Twenty to 30 cubic centimetres of the glucose solution should be run in, and then one cubic centimetre of "Pitocin" should be added to the glucose solution; 25 cubic centimetres of the solution should be run in, in the first half-hour, 50 cubic centimetres in the second half-hour and 100 cubic centimetres in the third half-hour (one minim of "Pitocin" per half hour). The foetal heart must be checked and the contractions of the uterus observed. If foetal distress or uterine spasm occurred, the drip administration of "Pitocin" solution must be discontinued; it might be recommenced in two hours. If foetal distress or intrapartum infection of the mother occurred, delivery would be necessary. The method of delivery depended on the condition of the cervix. If the cervix was well thinned out and half-dilated, scalp traction should be applied (if the baby was alive) and 400 cubic centimetres of 25% dextrose solution given intravenously. That had been of use in many cases. If the cervix was dilated to admit two or three fingers and thick, Cæsarean section must be considered. However, 400 cubic centimetres of 25% dextrose solution might be given intravenously and another vaginal examination carried out in half an hour, as the condition of the cervix might have changed and Cæsarean section might not be necessary.

Progress in Gynæcology.

JOHN N. CHESTERMAN (New South Wales) read a paper entitled "Progress in Gynæcology". He said that since the last Sydney congress in 1929 there had been little advance in understanding the aetiology of endometriosis or its treatment. Gynæcological surgery had widened in scope and safety along with general surgery and the many accessory techniques now available. Total hysterectomy was now practised in preference to the sub-total operation. There had been tremendous advances in endocrinology, although there was still a lack of a commercial gonadotrophic hormone derived from the anterior pituitary lobe, which might prove useful in stimulating ovulation; use of X rays for that purpose had stimulated pregnancy, but the risk of causing genetic mutations did exist.

Dr. Chesterman said that the investigation and treatment of infertility had made tremendous strides, and the early diagnosis and treatment of pelvic cancer had improved; he emphasized the particular value of Papanicolaou's vaginal cell test, and the superiority of surgery over irradiation for cervical cancer. In all, many advances had been made, but there was still much to be done.

Uterine Bleeding.

G. G. L. STENING (New South Wales) read a paper on uterine bleeding. He said that the practitioner could distinguish between normal and abnormal menstruation, and also determine haemorrhages occurring otherwise. The condition might be menstruation, menorrhagia, epimenorrhæa, polymenorrhæa, metrorrhagia, metrostaxis or intermenstrual bleeding. He should fully examine the patient both generally and specifically, and note whether the symptoms had arisen at any of the main episodes of the female reproductive life (menarche, marriage, conception, menopause). It might be undesirable to make a detailed examination of the genital tract of young girls or the unmarried; a rectal examination should then be made.

Discussing the causes of uterine bleeding in the absence of demonstrable pathological changes, Dr. Stening said that one aetiological factor was disturbance of the endocrine mechanism. That syndrome (menorrhagia, polymenorrhæa, profuse bleeding at irregular intervals) was most commonly met with in young girls or in women approaching the menopause, although it could be encountered at any other period of the reproductive life. The reason for the upset was by no means proved, but it could be due to long-continued action of oestrogen. The pathological changes found were by no means uniform. The truest pathological picture was obtained when curettage was performed at the commencement of the bleeding phase.

Referring to treatment, Dr. Stening said that accurate diagnosis was important; another important point was

the age factor. In the bleeding at or soon after the menarche anæmia was common; the excess bleeding was corrected when the hæmoglobin value was kept up to normal. In severe cases blood transfusion might be necessary. If periodical blood counts revealed progressive anæmia, more energetic treatment was indicated. Older patients and married patients should have a diagnostic curettage, to reveal any other unsuspected conditions that might be present.

Turning to medical treatment, Dr. Stening said that ergot and "Pitocin" were not efficient in the type of bleeding under discussion. Vitamins B, C and K had their advocates; in his experience they were unsatisfactory. He thought that there was some scope for "Blutene", a toluidine blue derivative, with which he had had some success; it should be used with as much care as hormone therapy—only in the absence of any pathological entity.

With regard to hormone therapy, Dr. Stening said that menorrhagia could be a feature of hypothyroidism; estimation of the basal metabolic rate would reveal the hypothyroid state, and thyroid extract could be given. In some cases the empirical use of thyroid was beneficial. Other hormones were employed in the treatment of bleeding. Oestrin could be used in high dosage to raise the oestrin threshold and so control the bleeding phase. Progesterone could be given to produce shedding of the endometrium, as in a medical curettage, but profuse bleeding might occur. Dr. Stening said that in his experience androgens had proved more effective than other hormones; they might be given to stop the initial bleeding, or after the oestrin therapy in larger doses.

There remained cases in which more drastic treatment was required. Radiotherapy could be used either in full castration doses or in temporary inhibitory doses to the ovaries. Once again the patient's age had to be considered; but in all age groups it was essential to be certain of the diagnosis. Curettage would establish the diagnosis, as well as affording temporary relief from the bleeding. Hysterectomy had a definite place in treatment; occasionally it was necessary as a last resort for a younger woman whose health was being impaired by severe bleeding.

T. IVOR HUGHES (Great Britain), in opening the discussion, said that under gonadotrophic stimulation from the pituitary, maturation of ovarian follicles occurred, which in turn released oestrin. Oestrin or oestrogen was the hormone which produced endometrial growth. Under its influence proliferation occurred; but when the level of oestrogen fell, the endometrium rapidly broke down, with buckling and fragmentation of the spiral arterioles, and so bleeding occurred. It had been said that normal physiological bleeding was preceded by a fall of up to 50% in oestrogen level. Normally there was a big increase in the amount of oestrogen in circulation during the latter part of menstruation, and it was that which produced rejuvenation of endometrium and the cessation of a normal flow. In the progesterone phase of a menstrual cycle no growth occurred in the endometrium as the result of its presence, merely an alteration in the pattern of endometrium to the typical progestational differentiation. However, that hormone was thought to convert oestradiol into estrone and estral, and so help in its rapid elimination from the blood-stream, and that produced the fall in oestrogen level which was necessary to start the menstrual flow. It had been stated also that progesterone inhibited the follicle-stimulating action of the pituitary, and so prevented the further manufacture of oestrin during the luteal stage of the ovarian cycle. If that was so and the progesterone levels fell, follicle stimulation of the ovaries by the pituitary was no longer checked, and multiple follicles ripened with increased levels of oestrogen. That produced rapid proliferation of endometrium and therefore excessive bleeding.

Dr. Hughes went on to say that therefore, according to the oestrogen and progesterone ratio in the body, excess uterine bleeding could occur from (a) an endometrium which was poorly developed or atrophic (rare) owing to lack of oestrogen stimulation, (b) an endometrium which

was hypertrophic, owing to excess of oestrogen stimulation and/or lack of progesterone, (c) a normal pattern of endometrium; however, in those cases it was more likely that an undiscovered organic lesion was present. Investigation of all cases should be along the following lines, irrespective of the patient's age group: (a) A full clinical history should be taken and a general examination made. (b) A local pelvic examination should be made under anaesthesia if necessary. (c) A full blood count should be made, and the Wassermann and Kahn tests performed. (d) An X-ray examination of the chest and the pituitary fossa should be made. (e) The basal metabolic rate should be estimated. (f) A diagnostic curettage should be performed on all patients aged over thirty-five years, and in every case of pubertal or adolescent bleeding which did not immediately respond to hormone therapy. The curettage should be performed in the premenstrual phase, if possible, but that was not always easy, because functional bleeding tended to produce an irregular rather than a regular cyclic pattern. (g) Lastly, a hystero-graphic examination had been performed in a few cases when all other investigations had given negative results, and had revealed the presence of a filling defect due to a submucous fibroid tumour.

Discussing treatment, Dr. Hughes said that many and varied methods had been tried in recent years, and in the mass of literature now accumulated all therapies seemed to have champions. In uterine bleeding, as in many other diseases with varying aetiology, one could say: "It is a poor treatment that has no patient." At the present time, of course, hormone therapy with oestrogens and progesterone was the mainstay of most gynaecologists; but androgens, gonadotrophins, thyroid, vitamins B, C and K, the anti-menorrhagic factor, ergot, "Pitocin" *et cetera*, had all been reported as helpful. In a large percentage of cases one was asked to examine the patient when bleeding was occurring, and the age of the patient was a big factor in considering treatment.

Dr. Hughes then considered treatment in detail, dividing the patients into two groups. The first group comprised pubertal and adolescent patients. Dr. Hughes said that they could be treated with hormones—oestrogen in any form, which must be given in large doses for forty-eight hours to raise the blood oestrogen level and stimulate the regrowth of endometrium. Dr. Hughes said that he gave five milligrammes of stilbestrol every four hours, but he had given that dose at intervals of two hours in severe bleeding. As a rule bleeding was arrested completely within thirty-six to forty-eight hours. It was essential to continue oestrogen therapy in diminished doses for twenty-one days—one milligramme of stilbestrol per day was adequate. If that was not done a release bleeding, worse than the one treated, might be precipitated. Release bleeding would occur a few days after that course had stopped and directly the flow ceased, oestrogen therapy should be started again in doses of one milligramme for a further twenty-one days. That dosage could be raised to two milligrammes or even three milligrammes per day in obstinate cases. In the second month progesterone should be given orally in some form from the fourteenth day of treatment and continued for seven to ten days. In two to three months all treatment might be stopped and a normal flow would be reestablished in a reasonable percentage of cases. The efficacy of the treatment might be tested by endometrial biopsy; but that was not feasible in young girls and unmarried women. Should large doses of oestrin fail to arrest the flow, then whatever the age group a curettage must be performed.

Dr. Hughes then discussed the treatment of patients in the second group, those aged over thirty-five years. He said that they should not be treated by hormones in the first instance. The haemorrhage must be arrested by a curettage, in order to exclude the possibility of malignant disease by microscopic examination of the curettings. Bleeding might recur after the curettage, and if no malignant disease had been found, treatment by hormones as outlined earlier might be instituted. If examination of the curettings showed typical hyperplastic endometrium, progesterone therapy alone added to the cycle often produced

a lasting and beneficial effect. Thyroid was of doubtful value in the treatment of uterine bleeding, unless there was definite evidence of hypothyroidism revealed by estimation of the basal metabolic rate. However, some gynaecologists gave it as routine with the oestrogen and progesterone therapy previously outlined. Dr. Hughes said that pituitary extract played no part in the arrest of functional bleeding; it might be of use in producing a full return to normal ovulation when, in spite of the control of uterine bleeding by the other hormones mentioned, anovular phases with sterility persisted in the anxious, infertile woman. Referring to androgen therapy, Dr. Hughes said that it was not really a wise form of treatment until the menopausal age group was reached. Physiologically it was unsound, it did not help to restore normal function, it produced only atrophic changes in the endometrium, it was expensive, and if given in large doses it could produce virilizing effects such as enlargement of the clitoris, acne, loss of figure, growth of hair and coarsening of the voice. The toxicity dose varied between 300 and 600 milligrammes per month. It had been suggested that in excess bleeding in the younger age group methyl testosterone given in doses of 10 milligrammes per day for two months would arrest menorrhagia, restore the flow to normal and produce an effect lasting for many months. Dr. Hughes had had no experience of that. He said that in the older groups, especially near the time of the climacteric, methyl testosterone was a most useful preparation in controlling excess bleeding, and would even bring about cessation of menstrual periods by producing atrophy of the endometrium. The anti-menorrhagic factor produced by Armour had been used with success in some cases of functional uterine bleeding. A series of patients had been treated, and it had been found to be of greater value for those with an atrophic endometrium. Unfortunately it had been impossible to continue the series because dollar imports were restricted and supplies could not be obtained. Dr. Hughes asked whether anyone had had experience of the preparation in Australia. He said that ergot preparations, hydrastis, "Styptol" (cotarnine phthalate) and many other mildly sedative preparations had been given and might be of some help; they were useful adjuncts to give in the form of medicine, which many people dearly loved.

Discussing general treatment, Dr. Hughes said that naturally rest in bed, sedation (for patient and anxious relatives alike), iron and vitamin B₁₂ to counteract the secondary anaemia and, if need be, a blood transfusion for the greatly exsanguinated patient, were necessary. A diet of high vitamin and protein content should be given. Vitamin B might play some part in the formation of active oestrin, therefore large doses should be given.

On the subject of operative treatment for patients in the second group, Dr. Hughes said that curettage was still the quickest and best way of controlling the blood loss. In 25% to 30% of patients suffering from bleeding due to an hypertrophic endometrium, it might be followed by long intervals of normal bleeding before excessive losses started again. Some authors claimed 70% successes in all cases of functional uterine bleeding from a dilatation and curettage alone. He had many patients who had undergone three or four beneficial curettings at intervals of six months to two years and had now passed the menopause without the need of more drastic surgery. Radium or X-ray therapy could be used to produce an artificial menopause in patients in the older groups when curettage and/or hormone therapy had failed. Dr. Hughes thought that the intrauterine implantation of radium was preferable, because one performed a routine diagnostic curettage as a preliminary step to insertion of the radium, and that in itself was essential. He knew of two cases in which X-ray therapy had been given to patients who had recurrent bleeding twelve months after a curettage and no further curettage was performed; both had carcinoma of the body of the uterus. Hysterectomy might have to be considered in the menopausal group. Some workers thought it had many advantages over irradiation therapy; however, the main one was that it removed a uterus which even after irradiation could develop a malignant neoplasm in either body or cervix.

Dr. Hughes finally referred to the "menopausal bleeder". He said that any patient could ovulate once or twice in the two years after the cessation of flow; and such were the unfortunate women who pushed prams along secluded sea fronts. Novak, in 1921, had reported the case of a woman still menstruating at the age of 104 years. Dr. Hughes believed that all patients who had bleeding one year after the menopause should undergo a curettage. The malignancy rate was high at that time of life, and 38% to 50% of carcinomata had been discovered by an endometrial biopsy. In other cases bleeding might be caused by endocervical or endometrial polyp. The former could be treated as innocent; but the latter, although innocent, on their proliferative surface tended to show malignant infiltrations at their base into the uterine wall, and in such cases it was better to advise a hysterectomy. If the patient refused operation, she should be followed up meticulously for many years. Senile atrophic endometritis and senile cervicitis could both cause bleeding, but could be rapidly relieved by small doses of oestrogen by mouth. Dr. Hughes said that he had not suggested injection therapy or implantation therapy. Hormones were effective by mouth, and he failed to see why any other method of administration was necessary.

CLEMENT CHAPMAN (New South Wales) said that he had never used radium in the treatment of a patient aged under thirty-five years; it was to be strongly condemned. Only once had he performed hysterectomy on a patient aged under thirty-five years, and he had regretted doing so because she ended up in a mental institution.

J. W. JOHNSTONE (Victoria) said that the difficulties in treatment were found in cases of functional origin. In women in the older age group hormones were of little value. Patients suffering from simple menorrhagia—in other words, those with excessive loss, but perhaps at shortened intervals and from a normal endometrium—were helped by the administration of androgens in small continuous doses for some months by mouth. The majority in the older age group were on the decline, and if curettage was not curative, hysterectomy was the best treatment. An empty house was often better than a bad tenant. Dr. Johnstone said that in the treatment of young women, saving the uterus was most important. The hormonal system was on the upgrade, and the more mildly affected patients grew into normality, particularly if they were removed from a situation of stress. Severe cases of the adolescent "menorrhagia gravis" type could be a major problem. Amongst the non-specific measures the use of toluidine blue ("Blutene") had been mentioned. Dr. Johnstone thought the antimenorrhagic factor of liver, sold as "Amfac", gave more promising results and had been favourably reported on by Sutherland of Glasgow, and by Swyer of London. In the treatment of anaemia resulting from functional bleeding with crude liver extracts given by mouth, the menorrhagia was found to cease suddenly. That did not occur with refined extracts. The anti-menorrhagic factor was found to reside in the discarded crude fraction and was marketed in capsules for oral use. Treatment of young patients by hormones was worth while, either by periodic block doses or progesterone to produce medical curettage, or by the cycle-conditioning techniques which periodically compressed and released the pituitary. By those means a life of unpredictable and incapacitating episodes could be exchanged for one of reasonable regularity, and after eight or ten months many patients were cured. The treatment was a specialist measure requiring regular and intelligent cooperation by the patient and should not be undertaken lightly.

Dr. Stening, in reply, said that he agreed that the effects of hormone therapy were often unpredictable. He was in complete agreement with what had been said about the contraindications for radium therapy and hysterectomy.

Vaginal Discharges.

A. A. MOON (New South Wales) discussed non-haemorrhagic discharges of vaginal origin not caused by neoplasm or other serious organic disease. He said that an under-

standing of the biology of the vagina was necessary for the assessment and treatment of vaginal discharges. It included consideration of the nature and changes of the vaginal epithelium, the glycogen content of the epithelial cells, the pH of the vaginal secretion and the presence or absence of Döderlein's bacilli. Altered vaginal biology favoured vaginal pathology and the development of abnormal discharge.

Dr. Moon then presented a method of routine examination and investigation of patients with vaginal discharge. He said that a careful physical examination combined with immediate drop examination of the discharge was usually sufficient for the diagnosis of most cases of vaginal leucorrhoea. The procedure was within the scope of any general practitioner or gynaecologist. Physiological leucorrhoea might occur before and after menstruation, at ovulation and during pregnancy. Chronic ill health or emotional disturbances might dispose the patient towards that type of leucorrhoea. Local treatment was avoided if possible on account of the risk of interference with normal vaginal biology. Gonococcal vaginitis was uncommon in women of the reproductive age, because the well-developed vaginal epithelium was resistant to gonococci and other germs. Vulvo-vaginitis in children before puberty was prone to occur on account of the poor resistance of an underdeveloped epithelial lining.

Dr. Moon then said that trichomonas vaginitis was the most common cause of leucorrhoea after puberty and resulted in much physical and mental upset. It was probable that some added factor was necessary to render trichomonads pathogenic and produce the characteristic vaginitis. Since there was a lack of accurate knowledge concerning the nature of infection and reinfection, it was not surprising that there were many methods of treatment and no specific cure. Most patients could be cured by careful treatment, but the prevention of reinfection was difficult. Dr. Moon described a method of treatment in which "Pieratol" powder insufflations, "Pieratol" suppositories and subsequently "Acetarsol Vaginal Compound" tablets were used vaginally. Difficult cases in which relapse occurred called for investigation of possible endogenous and exogenous foci of infection, including the patient's husband. Treatment of the patient's general health and aid in the adjustment of emotional disturbances were helpful. Monilial vaginitis had an increased incidence during pregnancy and in glycosuric patients. Certain antibiotics, by interfering with normal vaginal flora, favoured the development of moniliasis. Typical cases were easy to diagnose on clinical findings and "wet drop" examination. Satisfactory results followed treatment with gentian violet paintings followed by self-medication with "Propion Gel".

Dr. Moon said that preventive measures against both trichomonal and monilial vaginitis deserved more notice. Women who were away from their homes were advised to take showers rather than use the bath, and care should be taken against infection from toilet seats. It was desirable that public toilets for women should be equipped with gap-seats. Senile vaginitis was primarily an atrophic change of the vaginal mucosa with added secondary infection. The typical clinical findings and wet-drop examination aided diagnosis, but it might be necessary to exclude genital cancer by cervical and endometrial biopsy. Local treatment with oestrogen pessaries and small controlled doses of oestrogen by mouth gave good results. Foreign bodies and chemical irritation due to over-zealous local treatment or drug sensitivity on the part of the patient might cause leucorrhoea. Any vaginal discharge in a child which was not gonococcal, and which did not respond quickly to treatment should be considered due to a foreign body until proved otherwise.

T. IVOR HUGHES (Great Britain) said that the treatment for trichomonas vaginitis must extend over three months at least. Advice must be explicit concerning the insertion of vaginal suppositories. He recommended the use of disposable applicators, which made it easier for the patient to introduce a tablet or suppository into the vaginal vault. Discharges should be classified as symptomless or irritating. When the condition was resistant, the patient must be

kept in hospital for three weeks. A general anaesthetic was required for the first treatment, which was the insufflation of the vagina with "Aureomycin Vaginal Powder". That treatment was repeated twice a week for the three weeks. The knee-chest position was best for the insufflation.

H. C. CALLAGHER (Western Australia) stressed the importance of psychological factors and their management. He deplored repeated cauterization of the cervix and unnecessary over-treatment in cases of mild leucorrhœa. Dr. Callagher said that he did not know the source of trichomonad infection and had not yet found a husband who was a carrier. He also doubted the danger of toilet seats, and observed that often only one member of a family was infected. Dr. Callagher stressed the danger of insufflation in early pregnancy.

The Diagnosis of Salpingitis.

K. S. RICHARDSON (New South Wales), discussing the diagnosis of salpingitis, said that it depended on an understanding of the anatomy, pathology and bacteriology of the genital tract. Paths of infection to the Fallopian tubes and the typical infection which resulted fell into the following four groups: (i) hæmatogenous infection—typically tuberculous salpingitis; (ii) infection from some intraperitoneal source such as contiguous appendicitis or diverticulitis—typically salpingitis affecting particularly the fimbrial end of the Fallopian tube with blockage and adhesions; (iii) infection arising as a result of infection in some lower part of the genital tract, such as cervicitis or endometritis—typically endosalpingitis with the main effect of the infection on the tubal lining and possible sealing off of the tube to form a pyosalpinx; (iv) infection arising by spread through the parametrium mainly from an injured and infected cervix—primarily parametritis with secondary perisalpingitis, and less damage to the tubal lining.

Referring to the diagnosis, Dr. Richardson said that it depended on four essentials: (i) the history, which should be thorough and make particular inquiry as to previous abnormal pregnancy and abortion; (ii) the physical findings; the examination should be conducted on standard lines, with special reference to the back; (iii) laboratory investigations—attempted blood culture, estimation of the blood sedimentation rate, a leucocyte count, and examination of vaginal, cervical and intrauterine swabbings, with attention to antibiotic sensitivity; (iv) other procedures—exploratory puncture of the pouch of Douglas (used to distinguish hæmatocele from pus), culdoscopy, and insufflation and salpingography as a sterility investigation and as aids to the diagnosis of salpingitis.

Dr. Richardson went on to say that acute salpingitis was to be thought of in conjunction with generalized pelvic infection, of which it was only a part, and generally pelvic peritonitis accompanied it. Salient points in the diagnosis were the correct interpretation of pain and accompanying rigidity, and the presence of prostration and fever and signs of general toxæmia. Pelvic examination was difficult in the acute stages, and little could be felt but the general tenderness of acute pelvic inflammation. It was only with the subsidence of the acute to the sub-acute stage that masses of various size, shape and consistency could be felt, attached to the uterus, sometimes running outwards, and often curling into the pouch of Douglas. The differential diagnosis included the following conditions: acute pelvic cellulitis, acute appendicitis, extra-uterine pregnancy, twisted ovarian cyst, acute pyelitis. Generally they could all be distinguished, but occasionally the diagnosis was resolved only by exploratory section.

Referring to chronic salpingitis, Dr. Richardson mentioned tuberculosis of the Fallopian tube, because it was rarely diagnosed as such. Its signs and symptoms varied little from ordinary chronic infection, and it was diagnosed only on abdominal section or by histological examination. Chronic salpingitis could be mimicked by many pelvic diseases, including psychosomatic pelvic disease, and its recognition had to be accurate. The pain was not severe, but aching and constant. Discharge was not caused by

salpingitis, and was due to some infection coexisting in another part of the genital tract. Dyspareunia was a common symptom, as were disturbance of menstrual rhythm, menorrhagia and secondary sterility. There were in addition symptoms of lassitude and general nervous exhaustion. Recognition of the indefinable factor called "pelvic personality" would enable the clinician to sort out some of the psychosomatic cases in which salpingitis was not present. On physical examination, for the diagnosis of salpingitis to be made there must be present some palpable mass, some definite thickening of the Fallopian tube or at least some fixity of the uterus. Conditions to be considered in the differential diagnosis were endometriosis, retroversion of the uterus as a single entity, diverticulitis, and cervicitis and parametritis. Cervicitis and parametritis were often present and wrongly diagnosed as salpingitis. That was to be deplored, as the treatment of cervicitis was in many cases satisfactorily carried out with minor pelvic surgery (conization diathermy) and thus did not involve the opening of the abdomen. The results were highly satisfactory and the procedure could restore many women to good pelvic health with a minimum of economic waste.

H. C. CALLAGHER (Western Australia), in opening the discussion, said that acute salpingitis had become much rarer, but was still misdiagnosed as appendicitis. Dr. Callagher discussed the differential diagnosis and said that recurrent salpingitis was probably often a new infection, not always "chronic" salpingitis. Endometriosis might be symptomless, even in cases of maximal extent. "Pseudo-salpingitis" often occurred in women before marriage and was psychological.

H. K. PORTER (New South Wales) said that many patients admitted to hospital for salpingectomy, with the diagnosis of chronic salpingitis, had nothing wrong with them. The diagnosis was made far too frequently. Colpotomy was seldom indicated nowadays. Dr. Porter stressed the importance of conservative treatment of acute salpingitis. He said that "tenderness" in the fornices was found on examination of many normal women.

R. G. WORCESTER (Victoria) stressed the importance of thorough investigation, particularly of the lumbar segment of the spine, and reference to an orthopaedic surgeon for appropriate therapy. He quoted a case in which the diagnosis of retroversion as a cause of pain was made and the patient was treated surgically. The pain persisted and she consulted another gynaecologist, who released the suspension. That did not help, and yet another gynaecologist performed a subtotal hysterectomy. A fourth gynaecologist suggested that the pain would have been cured by removal of the ovaries, and suggested that that should be done. However, X-ray examination of the lumbar segment of the spine revealed the cause of the pain, which was cured by orthopaedic treatment. Dr. Worcester agreed that cervicitis was an important cause of pelvic pain. He said that before pelvic pain was diagnosed as neurotic, a thorough investigation should exclude every possible organic cause.

Culdoscopy.

ALAN GRANT (New South Wales) read a paper on culdoscopy, based on 162 cases in which the procedure had been carried out during the last two years at the Women's Hospital, Crown Street, Sydney. Dr. Grant stressed the fact that sterility was a common disability in Australians in spite of their advantages of climate, food and social services. He said that many diseases in the female pelvis could be seen through the instrument before they produced any physical signs that could be felt on bimanual examination. After briefly describing the history of the development of the culdoscope, he proceeded to the indications for culdoscopy, which were found to be present in a large gynaecological field and not only in sterility. He enumerated the indications for the operation and described its technique in detail. After listing the complications that could occur, Dr. Grant set out the results in the particular series in three tables. The first table dealt with "culdoscopy for 63 problems in sterility", and explained how it solved 70% of the "unexplained" cases. The second table dealt with

"culdoscopy prior to plastic operations on the Fallopian tubes", and showed how culdoscopy could be used to avoid the so-called "blind laparotomy", or an exploratory operation which often proved futile. The third dealt with "culdoscopy for 30 problems in gynaecology", and pointed out in particular how useful the procedure was for that group of women who suffered from chronic pelvic pain when negative physical findings were obtained after a bimanual pelvic examination; 70% of such women were found to be suffering from impalpable pelvic disease.

Dr. Grant, in conclusion, said that culdoscopy was a recent and worthy advance in gynaecological procedures, because it opened up a new vista in the diagnosis of sub-clinical disease which could be seen, but could not be palpated at a physical examination.

CLEMENT CHAPMAN (New South Wales) asked what was the advantage of vaginal culdoscopy over abdominal peritoneoscopy.

Dr. Grant, in reply, said that abdominal peritoneoscopy was more difficult and required the Trendelenburg position and the use of carbon dioxide under pressure. If operation scars were present, bowel damage was possible. Dr. Grant mentioned the use of the operating culdoscope and Doyle's pelviscope, which were required for taking biopsy specimens.

L. P. SAPSFOORD (Queensland) asked what type of pelvic abnormality was unexpectedly found in patients who were clinically normal.

Dr. Grant, in reply, said that in 20% of cases it was endometriosis, and that in 80% of cases the abnormality resulted from previous inflammation, either of the appendix or of the pelvic organs.

Vaginal Hysterectomy in the Treatment of Prolapse.

J. CAMERON LOXTON (New South Wales) read a paper entitled "Vaginal Hysterectomy in the Treatment of Prolapse". He said that the need for improvement in operative measures for the treatment of prolapse became evident when the results of operation performed for that purpose were examined. During the performance of 101 vaginal hysterectomies the advantages and facilities afforded by that method had made it appear superior to other procedures. If the Manchester operations were taken as typical of the procedures commonly employed, the failures of the method could be considered under four headings: (i) the number of recurrences of the original prolapse; (ii) the appearance of fresh prolapse, such as urethrocele and enterocele; (iii) the shortening and narrowing of the vaginal canal, particularly in the fornices, as a major factor in interfering with coital function; (iv) the necessity of leaving behind a uterus which in many cases was unhealthy and subsequently required removal.

Dr. Loxton drew attention to the endopelvic connective tissue, with its somewhat shelf-like arrangement across the pelvic cavity, in which the strong supporting bundles known as Mackendrodt's ligaments and the utero-sacral ligaments converged from the periphery of the pelvic walls to a focal point in the centre of the pelvis, where they gained attachment to the cervix and vagina. He said that those were the principal structures responsible for supporting the vaginal vault.

Dr. Loxton further said that the operation was reserved for cases in which, apart from prolapse, the uterus was sufficiently diseased as to warrant its removal, or in which, by reason of the age of the patient and the degree of prolapse, the uterus was no longer capable of functioning, and its removal would not add to the length of time or the risks of the operation. It should not be performed when the uterus was healthy and capable of functioning as an organ of gestation, merely to facilitate treatment of the prolapse. Vaginal hysterectomy and repair enabled the surgeon to deal, at the one time and by the one operation, with two distinct pathological conditions—disease of the uterus and prolapse of the genital tract; the alternative was to subject the patient to two separate major operations, with an interval between them of several months. Pre-

liminary removal of the uterus provided better definition of and access to the main supporting structures of the vaginal vault, and enabled them to be more effectively shortened, strengthened and united together. If the pouch of Douglas was opened, enterocele could be diagnosed at an earlier stage and dealt with in a more efficient manner by uniting the utero-sacral elements of the endopelvic connective tissue together in the absence of the uterus, so that that shelf-like support was prolonged backwards towards the rectum and beneath the pouch of Douglas. In that operation an opportunity was afforded of compensating for the inevitable shortening of the vagina, which was part and parcel of all anterior colporrhaphies, by reimplanting the posterior fornix at a higher level after dissecting along the utero-sacral ligaments. Width in the vaginal vault was retained by attaching its lateral extremities to the utero-sacral ligaments on either side and by closing the vaginal mucosa in the form of an inverted letter "Y". Repair of the vaginal supports could, and in the majority of cases should, be effected without sacrificing any vaginal mucosa at all. That would enable a functional vagina to be retained in spite of a certain amount of shrinkage, which would occur inevitably after the menopause. The practicability of vaginal hysterectomy was finally established after both peritoneal pouches had been opened and the pelvis explored. The presence of adhesions to bowel and non-descent and excessive size of the uterus were major difficulties, but need not be contraindications; the determining factors were the circumstances of the case and the skill and experience of the operator.

Dr. Loxton said in conclusion that in his series of 101 vaginal hysterectomies there had been no mortality and no serious morbidity. In two cases only had the operation to be abandoned in favour of other procedures. It was surprising that an operation so typically gynaecological and giving such excellent results should not be more generally utilized.

H. G. FURNELL (Victoria) said that vaginal hysterectomy caused more argument than any other operative procedure in gynaecology. The vaginal operation was one which must be in the armamentarium of every gynaecologist; but Dr. Furnell suggested that he must guard against addiction. He himself had had experience of vaginal hysterectomy over a long period. For several months he had worked in Vienna under Professor Adler, who was an addict; while he appreciated the skill that could be acquired with practice, he had also seen the dangers of addiction. He had had further experience with Dr. Robert Fowler, who had done a great deal to advance gynaecological technique in Melbourne. Dr. Furnell went on to say that even when one was dealing only with cases of prolapse there were certain definite contraindications to vaginal hysterectomy; previous pelvic operation and previous pelvic inflammation were only two of them. Certainly with increasing skill the field might be widened; but he warned the beginner against attempting the operation except when all conditions were favourable.

Dr. Furnell then referred to the Manchester operation. He said that Dr. Loxton had elaborated many faults in technique, and blamed (unjustly in Dr. Furnell's opinion) an excellent operation for the sins of omission of its exponents. Most gynaecologists who performed the Manchester operation had added various steps to the original technique; as a proponent of the operation, Dr. Furnell thought that they were nearly satisfied with their results. When they had met with a recurrence, a post-operative enterocele, a high rectocele or stress incontinence of urine, they had added to their technique steps specifically designed to obviate such misfortunes.

Dr. Furnell went on to discuss the risks. Dr. Loxton had said that vaginal hysterectomy did not add materially to the time taken or the risks involved. Dr. Furnell said that in his own case that was true only in a modified sense. The procedure did add to the time of operation, perhaps ten or fifteen minutes. As to the risk, he had never lost a patient after vaginal hysterectomy, but he had found an increase in post-operative complications, the important one being pelvic peritonitis. He thought that

was understandable. The vagina was more difficult to clean than was the skin, and moreover the skin could be packed off before the peritoneum was opened. That could not be done in the vagina, and fingers and instruments were passed through that dirty canal into the peritoneum—much more, for instance, than in the ordinary repair of an enterocele. Dr. Furnell knew that one of Melbourne's largest private hospitals, used by practically all the medical profession in Melbourne, looked somewhat awry at vaginal hysterectomies. It had to be agreed that experienced nurses were both dispassionate and highly qualified experts on the subject of post-operative complications. One of his difficulties was to avoid shortening the vagina. He performed what was really an interposition operation, using pedicles from the lateral walls of the uterus to interpose beneath the bladder, and when he tightened the utero-sacral ligament there was a tendency to shorten the vagina. In his experience two post-operative enteroceles had followed infection, and he had been amazed and disturbed at the rate at which such a protrusion could increase in size.

In conclusion, Dr. Furnell said that he had attempted to give nothing more than his personal views on the subject. He had no doubt that his technique could be improved, and he was constantly trying to improve it. Within those limitations he would say that the operation of vaginal hysterectomy was an excellent one, with contraindications and indications. When there was a prolapse associated with some indication for removing the uterus, and no contraindications, it was ideal. Every gynaecologist should be able to perform it, and should perform it only when it was the best method for dealing with the conditions present.

Early Diagnosis of Uterine Cancer.

C. G. CRAWFORD (New South Wales), discussing the early diagnosis of uterine cancer, said that the existing cure rate was unsatisfactory, the cause principally being the relatively late stage at which the diagnosis was definitely made. That was due to the fact that symptoms did not appear until the disease in most cases was well established. He set out three facts to form a basis on which earlier diagnosis could be made: (i) Cancer of the cervix in its early stages was a localized disease which metastasized relatively late. (ii) Cancer cells exfoliated and could be found in the vaginal secretions. (iii) Cancer of the cervix had a latent period when it might exist in a non-invasive form. The concept of seeking for cancer cells before the onset of symptoms led to the establishment of cancer detection clinics. Dr. Crawford said that the diagnosis of carcinoma of the uterine body was similarly aided by cytology, but attention had to be directed to the behaviour of the menses near the menopause and to post-menopausal bleeding; prolongation or irregularity of menses at that time should arouse suspicion of malignant disease, and also those women who menstruated beyond the age of fifty years were more prone to cancer than others. All post-menopausal bleeding, irrespective of origin, should be regarded as malignant till proved innocent.

Dr. Crawford then presented the following scheme for earlier diagnosis of carcinoma of the uterus: (i) The establishment of cancer detection and prevention clinics in large cities. (ii) Propaganda to induce women aged over thirty years to seek routine examinations either at a clinic or by their own doctors. (iii) Practitioners to make annually a pelvic examination of all their female patients aged over thirty years. (iv) The following pattern to be employed in those examinations: (a) for subjects without symptoms the cervix should be visualized, a smear prepared and examined and a bimanual examination carried out; (b) for subjects with symptoms of abnormal bleeding the cervix should be visualized and the origin of the bleeding determined, a smear prepared and examined, a bimanual examination carried out, and later a diagnostic curettage and biopsy performed if the smear findings were abnormal.

H. M. FISHER (Launceston) commended the work done by Dr. Crawford at the Cancer Detection Clinic. He said

that there was no doubt that early diagnosis was a very important factor in the future control of cancer, with certain reservations—for example, the type. However, he joined issue with Dr. Crawford on the value of such "well woman" clinics. For two and a half years he had conducted such a clinic at Launceston, but at the end of that time he had come to the conclusion that it was a complete waste of time. In that he was not alone, for in Great Britain exactly the same conclusion had been reached. In the United States of America, where dramatization of illness was such a large feature of normal life, the clinics continued as a social gathering; but many observers were in great doubt as to their value. Certainly they had not improved by the smallest margin the over-all cure rate of uterine cancer.

Dr. Fisher went on to discuss the improvement of early diagnosis. He thought that the most important method was by education of the general practitioners to the necessity for thorough examination by *speculum et cetera* of all women patients, especially those consulting them on account of the most important of all gynaecological symptoms—abnormal vaginal bleeding. All those present had frequently had to deal with the patient who had consulted one doctor for that reason, and had been given some hormones by injection or some pills to control the bleeding, without a proper physical examination. When it was realized that the average general practitioner might see one patient a year with uterine cancer which he could diagnose with reasonable certainty, he should not be judged too harshly if he made mistakes through lack of experience; but he could not be forgiven the mistakes made through lack of care. The cardinal rule, as unbreakable as the laws of the Medes and the Persians, was that all abnormal vaginal bleeding should be regarded as a symptom of malignant disease until it was proved otherwise. Dr. Fisher said that as a student he had been taught that rule, with the addition of the words "at or about the menopause"; but those words should be eliminated in view of the cases of cancer that occurred at early ages.

Dr. Fisher then said that the question whether cytology came into the routine examination of those patients by the general practitioner was very difficult to answer; but he would unhesitatingly say "no" if any attempt was made to use that method to supplant clinical examination. As Papanicolaou had said, cytodiagnosis was an infant science destined perhaps to become a Titan, and in that statement lay a wealth of wisdom. Dr. Fisher said that at a conference in London in June, 1955, which he had attended, reports were received by the Scientific Subcommittee of the Royal College of Obstetricians and Gynaecologists from eight centres in Great Britain where cytodiagnosis had been practised for some years. The crux of the matter was expressed in the conclusions: (i) Cytodiagnosis was an alarm bell giving a warning that must be heeded, not a final diagnosis. (ii) Only reports from well trained teams consisting of clinician, histologist and cytologist could be accepted, and only after discussion by the team of every doubtful case. (iii) The setting up of small cytodiagnosis centres all over the place was much to be deprecated and highly dangerous. Dr. Fisher said that the most important factors to remember in relation to cytodiagnosis were accuracy and training.

Dr. Fisher then said that the second educational attack must be made on the lay public, and in that connexion no complete answer had even remotely suggested itself. Publicity on cancer was one of the most difficult subjects. As long as women would continue to regard all abnormal bleeding as "the change" and seek confirmation of that diagnosis (always received) from the woman next door, so long would early cancer go undiagnosed. Dr. Fisher suggested the education of the female child at school and the adult female, but wondered how that was to be achieved. He said that sexual education was still at such a low ebb that it was an outstanding disgrace in modern life, while the mere knowledge of what menstruation meant was still cloaked in mediæval nonsense. If ignorance of those basic facts of physiology was so abysmal, he did not see how they could proceed with the teaching

of the pathology. Prejudice and prudery would have to be overcome, and the achievement of that aim lay not in the hands of the specialists but in the much more capable hands of the salt of the medical profession, the family doctors. Surely every family doctor could find a way of personal approach to the mother of every family and persuade her of the necessity for regular pelvic examination. Surely he could inquire from her whether her daughters understood the significance of the female physiology, and if they did not, he could persuade the mother to let him talk to the daughters in her presence and explain it in simple terms. Mass education was not a good thing; the ideal way of education was by individual informal, frank and confidential talks. If that could be brought home to the family doctor, and through him to the women themselves, the problem of early diagnosis would be largely solved. The labour might be heavy, but the harvest of healthy women could be a rich reward.

W. K. MCINTYRE (Launceston) recommended that for better follow-up a patient must be given a certain date on which to re-attend and not merely be instructed to report back again in, say, six months.

Cancer of the Cervix: Evaluation of Serial Biopsies After Irradiation.

K. A. MCGARRITY and J. GARVAN (New South Wales) presented a paper on the evaluation of serial biopsies in the treatment of cancer of the cervix after irradiation. The statement was made that the present controversy regarding the best methods of treatment for cancer of the cervix as between surgery and radiotherapy could be resolved by a sound system of assessment showing the suitable cases for each method. In that way, surgery and radiotherapy would stand side by side as complementary partners in the war against that disease, and no longer as rivals. At present, the absolute cure rates over five and ten years were much the same regardless of the method employed. That meant that irradiation and surgery cured the same patients, or else each method saved patients that the other method lost. The only figures that could be considered as evidence of effective therapy were the absolute figures. When selection of patients was employed, the cure rate varied inversely as the operability rate. That selection could be made clinically by staging, or cytologically.

It was stated that the system of cytological assessment depended on understanding of the difference between irradiation effects. Those differences were described in detail, with reference to experimental work carried out by Glucksmann, which showed the great variance between the results of treatment of the anaplastic tumour in comparison with the differentiating cancer. The effects of radiation were to cause cancer cells to differentiate or degenerate, or to stop or delay mitosis. In the last group there was always the possibility that such a "viable" or resting cell would divide again at a later date, and so lead to a recurrence of the tumour. That latter fact was the basic fact behind the principle of assessment of radio-curability of serial biopsies after irradiation treatment of cancer of the cervix.

A detailed description of the requirements to interpret the results from serial biopsies satisfactorily showed that

the emphasis was on experience in the operation and an experienced pathologist, who must be highly trained. If those requirements were met, then a correct forecast of the future of cancer of the cervix treated by irradiation could be confidently expected in over 90% of cases.

If the validity of the foregoing cytological assessment was acknowledged, then it would be desirable to see where the application of those principles would save some of the patients subjected to irradiation, and so to improve the absolute figures. If the frequency of sites of recurrence after radium application was examined, it was found that nearly one-quarter of the growths recurred on the primary site with or without involvement of parametrium or regional glands. At least half of those patients should be saved by early and adequate operation after the application of radium. A treatment plan was therefore outlined, which required each patient to attend a clinic at which a gynecologist, radium therapist, pathologist and physicist assessed the problem of treatment according to their respective spheres. The method of treatment in all cases was irradiation by radium and deep X rays followed by serial biopsies, which indicated the curability or incurability of the tumour by irradiation. The former group of patients completed their treatment by irradiation, and the latter group were treated by radical hysterectomy if such an operation was possible.

G. G. L. STENING (New South Wales) asked what was the procedure adopted in the application of radium and its relation to operation, and also whether radium was inserted under the physicist's control. Dr. Stening also said that the Wertheim operation was more difficult after repeated applications of radium than after a single application.

H. C. CALLAGHER (Western Australia) asked whether there was any relation between the presence of metastases and radium sensitivity.

E. W. GAULT (India) questioned the value of grading from tumour biopsies; he said that there were often mixed histological types in the one biopsy specimen, with variations from anaplastic to differentiated cells. If only one part of the tumour was examined, one might get a false impression and base the prognosis on it.

Dr. McGarrity, in reply to Dr. Stening, said that radium was inserted into the uterus in three tubes of 10 milligrammes *tandem*, with ovoids of 10 milligrammes in each fornix. The patient was radiologically examined, and the dosage was worked out by the physicist from the position of the various tubes. If necessary an alteration could be made in the second insertion to achieve the desired total effect. Dr. McGarrity admitted that operation was more difficult after that technique of radium therapy. In reply to Dr. Callagher, Dr. McGarrity said that if lymphatic emboli were found in sections, most often gland metastases were present. Of the cases in which the tumour was insensitive to radium, gland involvement was present in 49%; the percentage of gland involvement in cases in which the tumour was radium sensitive was 29%.

Dr. Garvan, in reply to Dr. Gault, said that biopsy specimens were taken from the growing edge of the tumour, and that changes due to irradiation were studied only in new foci of cells. An opinion could not always be given on a second biopsy, because only old foci remained.

Section of Ophthalmology.¹

President: A. E. F. Chaffer, M.B., Ch.M., D.O.M.S., New South Wales.

Vice-Presidents: J. L. R. Carter, M.B., B.S., Tasmania; J. McB. White, M.B., B.S., D.O., Victoria; C. Morlet, D.S.O., M.B., B.S., F.R.A.C.S., Western Australia.

Honorary Secretary: Dr. E. J. Donaldson.

President's Address.

A. E. F. CHAFFER (New South Wales) took as the subject of his president's address "Ophthalmology—Yesterday and Today". He said that the first big difference was the almost total disappearance of trachoma. As regards methods of refraction and diagnostic methods, there was nothing fundamentally new. But the sulphonamides and antibiotics had revolutionized the medical and surgical treatment of the eye. Glaucoma was still a problem, and its management should be approached from the preventive angle. Surgical techniques had made many advances.

W. DEANE-BUTCHER (New South Wales), in commenting on the president's address, reminded those present that the Ophthalmic Research Institute had money available to enable further progress in ophthalmology to be made.

The Early Diagnosis of Strabismus.

J. A. POCKLEY (New South Wales) discussed the early diagnosis of strabismus. He outlined the general development of binocular function, and showed that visual function was minimal at birth, but developed rapidly to fully normal adult standards by the age of five years. He mentioned some of the causes of squint, and indicated the types met with at different ages. Dr. Pockley emphasized congenital and early strabismus in which mechanical obstacles to binocular vision existed, and held that ophthalmologists were not yet tackling those problems early enough or decisively enough. He again stressed attention to the earliest foundations of binocular habit, and made a plea for care of those foundations at an earlier time than was generally practised. He pointed out that improvement in results would largely come from the earlier reference of patients by the family doctor. Finally, Dr. Pockley indicated the methods of early diagnosis of squint and mentioned the procedures used and what they involved.

Glaucoma—Its Modern Concept.

K. B. ARMSTRONG (New South Wales) discussed "Glaucoma—Its Modern Concept". He said that the older teaching on glaucoma ascribed its symptoms and signs entirely to its outstanding feature—namely, a raised intraocular tension. Cupping of the disk, the presence of scotomata, enlargement of the blind spot and haloes round lights were all said to be due to it. It was further assumed that in the relief of tension lay the treatment and the cure of the disease. Added to that, early diagnosis was regarded as being of inestimable value, as it enabled appropriate measures to be carried out before structural damage occurred. It was assumed that if that could be initiated in time, damage to the eye would not take place. Cases in which the accepted rules pertaining to the disease broke down had become so frequent, and the destruction of the sight had followed so unrelentingly on many successful operations, that a new concept of the condition was needed.

Dr. Armstrong went on to say that investigation had revealed that there was a daily variation in the intraocular tension of the normal eye of one to two millimetres of mercury (Schiotz). The tension was at its highest at 8 a.m. and fell during the rest of the day. In glaucoma that variation became uncontrolled. At first the rises in

tension resumed their normal level, but after some time the stage was reached when the base pressure itself rose and remained high. The condition was then irreversible. Those changes were correlated with changes in venous pressure which paralleled the alterations in intraocular tension and preceded them. It was assumed that changes in venous pressure were reflected in variations in the state of the capillaries. Those eyes which had been examined and in which the intraocular tension had become irreversibly high showed sclerosis of the capillary bed. The alterations of intraocular tension were now ascribed to the phasic variations in the state of the capillaries, and the state and lack of control of the ocular capillaries were now regarded as providing the origins of glaucoma.

Dr. Armstrong then said that primary simple glaucoma was held to be the product of quiet sclerosis, the products of which were usually cupping, scotomata and loss of peripheral field, often with low tension going on to extremely high tension as the sclerosis involved the drainage mechanism of the aqueous. In primary congestive glaucoma the event instigating an attack was capillary stasis with increased permeability leading to oedema of the tissues of the eye. In eyes subject to that condition, many mild attacks usually occurred from which the eye recovered, until one took place which became irreversible and strangulating. The mechanism of the two types of glaucoma, primary simple glaucoma and primary congestive glaucoma, was thus different. In the former, operation was of value when the intraocular tension rose and operation only relieved the tension and left the process of sclerosis untouched. In the latter, operation to relieve the tension acted as a safety factor often for a very lengthy period. Subsequently sclerosis might occur, but that could be long delayed. In either case eserine and pilocarpine were of great value. The action of those drugs was twofold. First, they were miotics, constricting the pupil and freeing the filtration angle, thus facilitating drainage of aqueous into the canal of Schlemm. Secondly—and more important fundamentally—they dilated the capillaries, even opening up new capillary spaces. That had the effect of lowering the hydrostatic head of pressure in the capillaries, and so lowering the tension of the eye by slowing down the production of intraocular fluid.

Dr. Armstrong finally said that if that vascular theory of the origin of glaucoma was accepted, ready explanations became available to solve the problem of why the disease showed a familial tendency and tended to be precipitated by worry, and once established, to become eventually bilateral, as well as to account for the presence of cupping when the intraocular tension was not raised.

Contact Lenses.

W. DEANE-BUTCHER (New South Wales) discussed the application of contact lenses to medical practice, primarily in relation to corneal conditions for which ordinary spectacles were of no use, but also in relation to certain sporting and occupational pursuits. He referred to the limitations of the lenses for general use in ametropia. With regard to corneal lenses, Dr. Deane-Butcher expressed the opinion that they might offer a much wider scope in general use. However, he thought that corneo-scleral lenses were to be preferred in most pathological conditions of the cornea. Reference was made to the advantage of

¹ The meeting held by the Section of Ophthalmology with the Section of Obstetrics and Gynaecology and the Section of Paediatrics has already been recorded.

fenestration in that type of lens, and the method of fitting with the moulding technique was described. Practitioners were urged to acquaint themselves with the requirements of a well-fitting lens, so that they might play a more responsible part in the supervision of their patient. Dr. Deane-Butcher gave credit to the work of skilled opticians in the development of contact lenses, but expressed the view that fitting was best carried out in circumstances permitting close liaison between the eye specialist and optician, particularly when pathological conditions of the cornea existed.

Dr. Deane-Butcher, in reply to a question, said that the average time during which a patient could tolerate contact lenses varied with individual patients from three to eight hours. Many patients with contact lenses had reduced corneal sensitivity (for example, in conical cornea), and hence the tolerance of many patients was good.

B. GOODWIN HILL (New South Wales) asked whether the wearing of the contact lenses caused further vascularization in mustard gas keratitis. He said that he had seen corneal opacity resulting from the trauma associated with wearing corneal lenses in a teenager.

Dr. Deane-Butcher, in reply, said that in no case had he seen an increase in corneal vascularization following the wearing of contact lenses in mustard gas keratitis.

Ocular Complications of Acute Exanthemata.

GROSVENOR C. T. BURFITT-WILLIAMS (New South Wales) read a paper entitled "The Common Ocular Complications of the Acute Exanthemata of Childhood". He said that such ocular development might be normally a part of the disease phenomenon, such as the conjunctivitis of measles, a primary involvement of the ocular tissues, as in diphtheria, or a secondary effect due to the toxins produced, such as neuritis following diphtheria in the upper respiratory tract. In varicella the eyelids were often involved, and there might often be severe ocular extension. In mumps the commonest ocular involvement was an acute dacryoadenitis, usually bilateral and often preceding the onset of the parotid swellings; occasionally there might be chemosis of the bulbar conjunctiva, and rarely transient optic neuritis. In rubella the only ocular symptom was the preceding catarrhal conjunctivitis. In scarlatina the eyelids might be involved in the rash, with edema proceeding to cellulitis or even gangrene; conjunctivitis always accompanied the disease, but intraocular involvement was rare. In whooping-cough, hæmorrhages, mainly subconjunctival, followed severe coughing.

Dr. Williams concluded by mentioning the two important sequelæ which might follow any of the exanthemata—paresis of ocular muscles following a complicating encephalitis, and the becoming manifest of a latent squint or phoria.

BRIAN OLIVER (Victoria), who said that he was a paediatrician in general practice, commented that in practice conjunctivitis was not always seen in cases of measles. Referring to the situation when a squint became manifest after measles, he asked if the child should be sent to an ophthalmic surgeon.

Dr. Burfitt-Williams, in reply, said that as soon as the squint became manifest, the child should be referred to an ophthalmic surgeon, or suppression with amblyopia would result.

Cortisone, Hydrocortisone and ACTH in Ophthalmology.

P. H. MERORY (New South Wales) discussed the importance of the corticosteroids as a therapeutic aid in ophthalmology. He said that soon after the discovery of the action of the adrenal hormone on rheumatoid arthritis, its action on the accompanying iritis was observed. For the past five years many reports on the action of cortisone and allied agents on a great variety of ocular diseases had appeared in the literature. The hormone could be administered both topically and systemically. The topical application was mostly used for external ocular diseases and diseases of the anterior ocular segment. The systemic

route was chosen for pathological conditions of the posterior segment of the globe. Dr. Merory discussed the dosage of the preparations of cortisone and ACTH for topical and systemic administration, and also referred to the usefulness of the subconjunctival injection of cortisone. The side actions and complications following hormone therapy were enumerated. Dr. Merory said that the adverse reaction of tuberculosis of the eye to cortisone therapy had been pointed out by Duke-Elder, whereas MacLean had reported successes with intensive ACTH therapy. Amongst many unsolved problems surrounding cortisone there was the question: "In what manner does cortisone take its action on the tissues?" Evidence pointed to an action at cell level, either directly on the cells or through an intermediary agent. Cortisone protected the cell from the irritant while it was being administered, but did not alter the sensitivity of the cells. It suppressed inflammatory reactions through suppression of capillary permeability and depression of fibroplastic activity and phagocytosis. It interfered with healing by depressing neovascularization and growth of endothelium. The usefulness of those actions in the treatment of ocular inflammations was pointed out and the dangers of its ill-advised use were described. Dr. Merory stressed the importance of the corticosteroids as agents in the preservation of the transparency of the ocular media. He then described the action of cortisone on a large group of eye diseases. It had its greatest usefulness in the treatment of non-infectious inflammations of the external part of the eye and uvea, and had to be used with great care and only as an adjuvant in granulomatous inflammation of the eye. Dr. Merory finally discussed the contraindications to ocular cortisone therapy and criticized its uninhibited use.

ADRIAN JOHNSON (New South Wales) said that the corticosteroids were of great interest to dermatologists, who had found them of immense value, more so probably than workers in any other field of medicine. Fluorohydrocortisone for local use was found to be as effective as hydrocortisone in one-tenth strength. Cortisone itself was of no value at all as a local application for skin conditions. The recently available δ cortisone appeared to promise well in systemic therapy. Whilst δ cortisone was effective in about one-fifth the concentration, it was held that the untoward side effects of sodium retention, hypertension *et cetera*, were much less likely to occur than with cortisone.

The Red Eye.

R. L. CAHILL (New South Wales) read a paper entitled "The Red Eye". He said that the problem of the red eye was a most worrying one. The most common cause was conjunctivitis; it was almost always bilateral; the conjunctiva was hyperæmic, more so towards the upper and lower fornices; the pupils were normal in size and reaction; the tension was normal; the cornea was bright and clear.

Dr. Cahill emphasized the point that the danger sign in the red eye was the presence of circumcorneal injection, a mauve-coloured area of the sclera a few millimetres wide. It indicated inflammatory conditions of the anterior segment of the eyeball, such as keratitis, iritis, cyclitis or iridocyclitis, or increased intraocular tension, as in glaucoma. Whenever circumcorneal injection was present, the general practitioner would be wise to refer the patient to an ophthalmologist, although acute iritis could be given treatment for a time if there was no doubt about the diagnosis.

ADRIAN JOHNSON (New South Wales) said that dermatologists were often asked to examine patients with seborrhœic dermatitis who had chronic blepharitis. He asked if Dr. Cahill considered that the latter condition was secondary to "dandruff" or merely another sign of a general ectodermal reaction. Dr. Johnson went on to say that dermatologists saw patients with inflammation of the skin surrounding the eyes which was in most cases due to external irritants, especially applied medicaments. However, in some cases the stress appeared to be of psychic origin. He asked if that applied to conjunctivitis also.

Dr. Cahill, in reply, said that he believed that dandruff and blepharitis were linked, and that when the dandruff cleared up, then the eyes cleared up also. With regard to stress, Dr. Cahill believed that it often played a part in conjunctivitis.

Eye Injuries in Industry: Their Management and Prevention.

LENNOX PRICE (New South Wales) read a paper on eye injuries in industry. He said that the subject was of importance because there was probably no other department of industrial medicine in which relatively trivial forms of trauma caused such prolonged disability. With the decentralization of industry more medical officers in country areas were treating eye injuries. Figures from several industries showed that eye injuries formed over 10% of the total injuries. A high proportion (90%) was preventable. Routine methods of treatment were essential, and included a careful history and thorough examination. In injuries from flying missiles corneal foreign bodies were the commonest, and those patients required careful treatment to avoid complications. A mydriatic was necessary, and homatropine was preferable at first as it caused less disability. If the eye was still red after three days, the patient should be sent to a consultant. Deep corneal foreign bodies required expert care. Intraocular foreign bodies frequently followed a chipping injury and were easily missed. An X-ray examination should be made and the patient sent to a consultant if there was any doubt. Injuries from sharp instruments might cause wounds of the lids, conjunctiva and globe, or of all three. Marginal

lid wounds and those involving the canaliculus needed expert attention. Conjunctival wounds had to be carefully explored. All patients with penetrating injuries should be sent to an ophthalmic surgeon. Injuries by blunt instruments varied with the severity of the trauma. Serious intraocular complications might be masked by a simple black eye. Injuries of the orbital margin might cause diplopia. Injuries by molten metal might cause scarring of the punctum unless expert treatment was given. Adhesions and corneal complications were common. Chemicals could cause severe damage, especially lime and ammonia. The best immediate treatment was copious irrigation followed by the application of antiseptic ointment before the patient was sent to a consultant. Explosion injuries occurred especially in mining, when the eye condition might be overlooked in the presence of other injuries. "Flash" injuries occurred in welding, the assistant being more often affected. A "flash" injury confined to one eye nearly always proved to be the presence of a corneal foreign body.

Dr. Price, in conclusion, said that in the field of prevention much could be done by goggles, masks and special screens; but the practical application presented many difficulties. There appeared to be an increasing awareness of the need for more eye protection in industry, but further progress would probably be chiefly due to the efforts of the industrial officer. The worker had to be encouraged to regard his eyes as the finest precision instruments in his possession, and if injury should occur the medical officer should restore them to maximum efficiency with the least possible delay.

Section of Orthopaedics.¹

President: E. F. West, M.B., B.S., M.Ch. (Orth.), F.R.C.S.E., F.R.A.C.S., South Australia.

Vice-Presidents: J. R. S. Lahz, M.B., M.S., F.R.C.S.E., F.R.A.C.S., Queensland; W. L. Macdonald, M.B., Ch.M., M.Ch. (Orth.), F.R.C.S.E., F.R.A.C.S., New South Wales; C. H. Hembrow, M.B., B.S., F.R.C.S., F.R.A.C.S., Victoria; A. McL. Millar, V.R.D., M.B., B.S., F.R.C.S.E., F.R.A.C.S., Tasmania; R. D. McK. Hall, M.B., B.S., F.R.C.S.E., F.R.A.C.S., Western Australia.

Honorary Secretary: Dr. A. I. Rydderch.

President's Address.

E. F. WEST (South Australia) took as the subject of his president's address "Some Observations on the Treatment of Fractures". He said that the outstanding advances in fracture treatment during the last thirty-five years were: (i) the striving for a more perfect reduction, (ii) maintenance of position by internal fixation, (iii) the treatment of open fractures by closure, and (iv) the greater emphasis placed on rehabilitation of the patient. Dr. West dealt with those points *seriatim*. He spoke at some length about the advantages, disadvantages and dangers of internal fixation, and by way of illustration mentioned the dangers associated with certain fractures. Reference was made to the dangers of unpadded plaster casts. Dr. West stressed the fact that fractures were individual problems and that hard and fast rules could not be laid down in treatment, only certain principles. The advantages of segregating the patients with severe fractures in fracture clinics or accident services, to be dealt with by personnel with specialized training, were pointed out. The set-up of such an accident service was described. Finally Dr. West mentioned certain features desirable in fracture treatment, such as unity of control and follow-up.

B. KEON-COHEN (Victoria) emphasized that there were many absolute indications for internal fixation: for example, oblique unstable fractures of the tibia, multiple fractures in the one line which could not be controlled by any other means, and displaced diaphyseal fractures which had resisted closed reduction. He was disappointed that Dr. West had not emphasized those fractures.

J. VAN R. HOETS (Sydney) advocated the use of padded split-plaster casts for the initial immobilization of fractures. He also supported the president's remarks in relation to the treatment of fractures in organized clinics.

Dr. West, in reply, said that he was in agreement with Dr. Keon-Cohen's remarks save for the inevitable redisplacement of oblique fractures of the shaft of the tibia. Dr. West felt certain that a good result could be obtained by closed reduction. He said that his paper was primarily intended to draw attention to some of the dangers resulting from excessive and ill-advised internal fixation together with the proportion of non-unions which followed plating.

Denervation in Osteoarthritis.

O. W. LEITCH (South Australia) read a paper entitled "Denervation in Osteoarthritis". He said that osteoarthritis was an end result of an inflammatory change occurring in joints during life. Disability occurring in those joints was generally the result of trauma in tissue which could not adequately repair itself. That traumatic inflammation resulted in pain and muscle spasm with its consequent limitation of function and deformity. The pain itself, firstly resulting from inflammation, was throbbing and had the classical inflammatory sequence. Secondly, as the painful part was a mechanical structure, there would be an additional mechanical sequence referred through the nerves corresponding to the joint supply, as would be the referred muscle spasm. The latter would in addition produce a diffuse, unpleasant aching.

Dr. Leitch said that when conservative treatment failed some joints—spine and tarsus—might be fused without disability. In other joints fixation produced considerable disability, but arthroplasty of one form or another might

¹The meetings held by the Section of Orthopaedics with the Section of Public Health and Industrial Medicine, the Section of Radiology and Radiotherapy, and the Section of Surgery have already been recorded.

be possible. The disadvantage of that was that the operation was performed on damaged tissue with inadequate power of repair. Denervation, being extraarticular, did not involve the joint itself, and so was not subject to that disadvantage. By release of muscle spasm improved function would occur. Relief of pain depended on the effectiveness of the denervation, which must be as complete as possible. The degree of relief could be ascertained beforehand by blocking the nerve supply with local anæsthetic solution; that was often in itself a therapeutic as well as a diagnostic measure.

Dr. Leitch went on to say that the hip, knee, elbow and ankle had all been successfully denervated. The operation was an anatomical exercise, and familiarity with the variations as well as with the normal pattern was essential. Many of the past failures had been due to incompleteness of nerve excision. Regeneration was unlikely, as those nerves were separate entities running in a definite pattern. Charcot's joints did not develop, as only the inside of the joint was deprived of its supply; the surrounding muscles, other joints and the remainder of the limb were not affected. To produce such joint changes, loss of pain sensation in the limb and so unrecognized trauma were necessary. The ideal cases for denervation were (i) those in which a reasonably satisfactory joint still remained, (ii) those in which the procedure was for relief of pain alone in elderly patients, (iii) those in which it was performed as an adjunct to some other procedure, when early painless movements were required, and (iv) those in which little other than permanent fixation was available—for example, in the knee.

L. J. WOODLAND (New South Wales) said that the more complete the knowledge of the nerve supply, the better would be results from denervation. He believed that the secret of success in relieving pain by arthroplasty of the hip and elbow was complete extirpation of the capsule, the most certain method of complete denervation. In the hip there was some danger of interfering with the blood supply if the capsule was extirpated widely. Dr. Woodland said that on occasions he had abolished the persistent pain on the inner side of the thigh due to osteoarthritis, and in one case of cup arthroplasty in which the capsule had not been completely excised he had succeeded in relieving the pain by obturator neurectomy. He did not believe that hyperæmia was usually present in osteoarthritic joints. The pain at night, and that in the morning which disappeared on use, was due to anoxæmia caused by local arteriosclerosis and deficient blood supply.

R. G. ROBINSON (New South Wales) asked whether, since microtrauma was considered a prerequisite of the development of osteoarthritis, without consideration of other factors, and since Dr. Leitch had interrupted the reflex protective arc, Dr. Leitch had noted any measurable advance in the osteoarthritis of the joints during the eighteen months of observation.

R. A. MONEY (New South Wales) said that the follow-up period was not yet long enough to allow the late results of complete denervation of a joint to be ascertained. He asked how many incisions were necessary to trace and divide the numerous articular branches mentioned.

Dr. Leitch, in reply, said that denervation of the hip required three incisions: (i) a posterior incision for section of the nerve from the *quadratus femoris*; (ii) an oblique inguinal incision for division of the obturator branches; (iii) a vertical incision for the femoral branches. The knee also required medial, lateral and posterior incisions. Dr. Leitch said further that he doubted that a Charcot's joint would result, as the fibres from muscle and the overlying skin still possessed an undamaged nerve supply. In the short period so far, no Charcot changes had occurred either clinically or radiographically.

Medical Aspects of Osteoarthritis of the Hip.

MICHAEL KELLY (Victoria) read a paper on "Medical Aspects of Osteoarthritis of the Hip", in which he considered the following five aspects of osteoarthritis of the

hip: (i) its relation to arthritis of other joints, (ii) the flexion deformity, (iii) the danger of excessive movements, (iv) the prognosis, (v) treatment with "Butazolidin".

Dr. Kelly said that rheumatic inflammation was essentially the same whether it occurred in the hip or in other joints. The appearance of coxarthrosis was characteristic, because a narrow neck and head showed early radiological change. The disorder was purely monarticular in only 25 out of 100 patients reviewed. The early flexion deformity, due to spasm, was masked by hyperextension of the lumbar part of the spine. It caused weight to be borne by cartilage which was not accustomed to bearing weight. It should not be encouraged by prolonged sitting with the hip bent or by excessive flexing movements. The early stiffness was reflex, to prevent further damage to inflamed articular structures. Spasm of muscles could not be overcome by stretching, and passive movements did more harm than good. The joint should not be completely rested, nor should it be excessively used. The weight-bearing function of the hip was more important than its mobility.

Dr. Kelly went on to say that the prognosis of osteoarthritis of the hip was not always bad. Because its cause was not known there was a tendency to think erroneously that they could do nothing except operate. The condition was not inevitably progressive; the majority of hips did not become ankylosed, but the patients carried on a bearable existence with limited activity and a reduced range of movement. An encouraging prognosis strengthened the patient and prevented him from worrying. Many patients benefited greatly from a sincere interest in their problems. That could be strengthened with placebo injections or mixtures. The benefit which resulted from injections of procaine into tender muscles was frequently more than could be expected from a placebo.

Discussing "Butazolidin", Dr. Kelly said that 60 patients had been treated with the drug, which was valuable in 50% of cases; 37 took it without harm for long periods. In doses of 0.3 gramme daily it was quite as effective as, and less toxic than, in larger doses. The dose could often be reduced and finally tapered off to 0.1 gramme every second or third day. Six patients had had prolonged remissions of arthritic pain after giving the drug up. Those who could not take "Butazolidin" were patients aged over sixty-five years, or those with preexisting cardiovascular, renal or gastro-intestinal disorders. Patients should be given a written list of toxic symptoms and told to stop treatment as soon as any of them appeared. Gastric and cardiac symptoms prohibited further trials, but many other toxic effects required only a brief withdrawal of the drug. Relapses were more commonly due to overdosage than to underdosage. A refractory state readily developed and was intensified by further increase of dose. It was overcome only by withdrawal of the drug for one to four weeks. Relapse due to underdosage also often required a brief withdrawal.

Surgical Relief of Pain in Osteoarthritis.

J. W. VAN R. HOETS (New South Wales) read a paper entitled "Surgical Aspects of Relief of Pain in Osteoarthritis". He said that in certain types of osteoarthritis pain could be relieved by surgery. The amount of pain depended on the degree of damage in and around the joint, though not uniformly; there could be gross changes without any pain, as in a Charcot joint, or severe pain with minimal changes. Dr. Hoets said that when movement could not be carried out painlessly, the joint could be helped by splints or braces to limit and support movement; when the pain was more severe, movement might have to be eliminated altogether, either by splinting or by arthrodesis or arthroplasty. The joint most commonly needing surgery was the hip. In unilateral arthritis possibly ankylosis was the best treatment, but when the condition was bilateral that was not so.

Dr. Hoets said that the Lorenz osteotomy gave excellent results, but after eight to ten years the condition would have progressed and then there would be difficulty. The Smith-Petersen operation, despite possible complications,

had given the best results to date. The Judet operation for insertion of an acrylic prosthesis had had a great vogue, but had lost favour, owing mainly to breakage or loosening of the prosthesis. Dr. Hoets considered that the Judet operation was best limited to the more elderly, for subcapital femoral neck fractures as well as for arthritis. Dr. Hoets mentioned the Thomson prosthesis, but said that he had not used it because he had little confidence in stainless steel, and felt that vitallium should be used instead. The Austin Moore prosthesis, since it must be fixed into the medullary cavity, carried more risk of infection, but antibiotics had covered that; its cost was high. The Batchelor and Girdlestone operations were most useful, especially for failed Judet operations and in certain cases of very advanced monarticular cases. In summing up, Dr. Hoets expressed his preference for the Smith-Petersen operation, with the Judet in advanced age.

M. KELLY (Victoria) said that at the International Rheumatology Congress in Geneva in 1953 he had heard one of the Judets give an interesting talk on the development of their technique. A good deal of the talk was devoted to the explanation of failures, to show why others failed while they were getting good results. Dr. Kelly said that he gathered that much trouble came from poor correspondence between the head and the acetabular socket, so that it did not fit properly. He had gathered from records of recent failures that the head, which fitted at first, wore away and later became too small for the acetabulum. On thinking it over, he decided that that seemed to be an expected result; the acetabular cartilage was a tissue which continually renewed itself under constant friction and was not worn away; it was rather like the skin of the palm, which did not suffer from being rubbed continuously against a door knob. If that went on for hours, day in and day out, it would be the door knob which would wear away and not the palmar skin. Dr. Kelly said that that seemed to him one of the reasons for failure. The Judet brothers thought that the hardness of the acrylic would overcome the soft living tissue, but it was the fact that it was living and renewed itself which made the cartilage more durable than the acrylic.

Sudek's Atrophy.

A. F. DWYER (New South Wales) read a paper on Sudek's atrophy. He said that it was a severe post-traumatic dystrophy, which if untreated could leave a permanently crippled limb. It was a neuro-vascular disturbance and was allied to causalgia, to the so-called shoulder-hand syndrome and to various minor dystrophies which might follow an injury. Dr. Dwyer discussed the physiology of the condition and then described the clinical picture. He said that the condition followed a minor injury; in spite of appropriate treatment the pain grew steadily worse, and ultimately organic changes appeared. Dr. Dwyer said that the basis of the condition was simply a matter of theory; but he suggested a hypothesis which had the advantage of simplicity. It was based on the proposition that injury brought about an axon reflex with the liberation of a chemical substance; the chemical substance caused vasodilatation, pain and a second axon reflex, so that the process was repeated indefinitely. Dr. Dwyer considered that such a mechanism explained (i) how the painful area expanded in a "glove and stocking" manner, and (ii) how the axon reflexes could continue to cause pain long after the original injury had healed. The vaso-dilatation and increase of capillary permeability were observed facts and accounted for all the pathological features. Discussing treatment, Dr. Dwyer said that obviously even greater vaso-dilatation would be of value, so that measures to promote it should be used. Active exercise carried out regularly and constantly, with active use of the limb whenever possible, was the most important single measure. Cortisone was of value when burning pain (especially at night), edema and tenderness were pronounced.

S. F. REID (Victoria) said that the reason why sympathectomy reduced the pain in certain cases of Sudek's atrophy was that there were undoubtedly afferent fibres within the sympathetic nervous system. Division of those fibres abolished the pain.

The Use and Misuse of Plaster Casts.

HUGH C. BARRY (New South Wales) read a paper entitled "The Use and Misuse of Plaster Casts". He said that the introduction of plaster of Paris had made it possible to apply new principles to the treatment of fractures, since it gave better fixation yet allowed freer movement, and so made possible earlier rehabilitation. Its great usefulness, however, had caused some of its limitations to be overlooked. Not every fracture needed immobilization, and some were better treated without it. Sometimes fixation of the joints above and below was impossible, and attempts to ensure fixation had caused loss of limbs through interference with circulation. Certain fractures could not possibly be retained by plaster casts, and alternative methods of fixation were necessary. Dr. Barry emphasized that the most important consideration was the danger to the circulation inherent in plaster casts. Tight casts caused functional deficiencies because of edema, muscular ischaemia and even gangrene, either because they were applied before the initial swelling had subsided or because allowances for gravity had not been made. It was too late to split the cast next day—muscle could stand only some six hours of ischaemia. Casts should be split as soon as they dried.

R. C. GEEVES (New South Wales) asked what form of immobilization Dr. Barry would employ for a Colles' fracture.

Dr. Barry replied that he would use a dorsal steel splint extending over the thumb metacarpal. The plaster cast could be completed in two or three days.

L. WING (New South Wales) said that the figures from the Vauxhall factory were amazing. They pointed to two factors—excellent treatment and an enlightened employer and employee organization. Many poor plaster casts and much poor treatment were seen. There was a need for a more forceful teaching of principle and detail. Propaganda was needed to encourage the employer to take the convalescent worker.

R. HODGKINSON (New South Wales) said that a fracture was a bone injury as visualized in the X-ray film. A fracture meant a plaster cast if it was to unite. A fracture as seen on an X-ray film was actually only a small part of the injury. A careful preliminary examination was required to assess the soft tissue damage; for example, crushing of a lower limb with simple trauma could lead to massive haematoma and loss of the limb.

Both J. L. STOKES (South Australia) and G. KERRIDGE (New South Wales) said that the Australian worker would return to his occupation as readily and as quickly as his English counterpart, save in certain unions and works where the gravity of an injury was always magnified.

L. J. WOODLAND (New South Wales) said that he agreed with almost everything Dr. Barry had said. However, he pointed out that the use of a hyperextension plaster jacket was effective in the correction and control of a fracture at the thoraco-lumbar junction. The inefficiency of a plaster jacket applied only to affections of the lumbosacral joint and the lower two lumbar joints. Whilst "Mellmac" was more durable than plaster of Paris and so facilitated the patient's return to work, it occasionally caused dermatitis. Dr. Woodland agreed with Dr. Kerridge that pending common law actions and the risk of future negligence claims interfered with the early return of injured workers to work. Plaster of Paris casts should not be used if correction was doubtful.

Cervical Spondylitis and Brachial Pain.

W. J. BURKE and G. SELBY (New South Wales) presented a paper entitled "Clinical Features of Cervical Spondylitis". It was pointed out that in cervical spondylitis the intervertebral disk underwent degenerative changes which caused osteophytic reactions in the adjoining vertebrae, and the osteophytes might protrude either into the spinal canal or into the intervertebral foramina. Neurological disturbances depended on the site of the protrusions; if dorso-medial, they would produce unilateral or bilateral cord compression, and if dorso-lateral or intraforaminal, they would compress the spinal nerve root. Among 23

patients with radicular syndromes, 17 were over and six were under forty years of age; 11 gave a history of injury and 12 gave none, but only three had a definite history of injury within six months of the appearance of symptoms. The predominant symptom was pain, usually accompanied by paræsthesia of the fingers, readily aggravated by straining efforts. There was often some sensory impairment, and a varying degree of muscle wasting and weakness. Radiographic findings consisted of disk-space narrowing with marginal sclerosis or lipping, and evidence of encroachment on the exit foramina; myelography revealed interruption of the column at the affected levels. The most difficult differential diagnosis was from acroparæsthesia due to a costo-clavicular syndrome or to compression of the median nerve in the carpal tunnel. Treatment was by cervical traction, and in selected cases by cervical decompression.

The spinal syndromes were next considered. There were twelve patients in that group, all over forty-five years of age, and two had definite histories of recent trauma. In most the onset of symptoms was gradual, with progressive weakness and stiffness, referable to both upper and lower limbs; the symptoms were very variable. The radiographic changes were similar to those of the radical syndrome. The differential diagnosis from many other cord lesions was difficult. Treatment was preferably conservative—since the condition occurred in the later age groups, cervical decompression was not often helpful, and gentle continuous neck traction with the wearing of a collar for six months was the best method.

There were also five patients with pain at the back of the neck and radiological evidence of spondylosis, but without symptoms of root or cord damage.

G. N. ARTHURS (New South Wales) discussed "Neurosurgical Aspects of Brachial Pain". He mentioned the wide variety of lesions which could cause pain in the arm, from Wood's sublingual angliomyoneuroma to cortical conditions. Dr. Arthurs said that trauma anywhere within the range could cause pain; general conditions such as peripheral neuritis from many causes could specifically include the arms; ulnar neuritis due to excessive mobility of the nerve behind the medial condyle, and median neuritis in the carpal tunnel syndrome were specific examples of local conditions.

Dr. Arthurs mentioned that syringomyelia and subacute combined degeneration rarely caused pain, but almost any other lesion could. The most important investigation was radiography of the neck, the first thoracic vertebra always being included; myelography was next in importance. Treatment involved first the removal of the cause if possible; analgesics were often necessary, and spino-thalamic cordotomy, posterior rhizotomy and even prefrontal leucotomy might be necessary to help relieve intractable and incurable pain.

L. J. WOODLAND (New South Wales) said he believed that manipulation was much more successful in the treatment of irritative lesions of the cervical nerve roots than in the treatment of similar lesions in the lower part of the back. Manipulation might be performed with or without anaesthesia. In the treatment of patients who were able to remain under the control of a skilled physiotherapist, daily halter traction was performed before resort was had to manipulation under anaesthesia. Most patients were relieved by one of those two methods of treatment. Dr. Woodland suggested that after cervical laminectomy the surgeon should prevent final flexion deformity of the neck by the use of a cervical support and exercises to strengthen the sacrospinales. On two occasions recently he had had to operate to correct severe flexion deformity of the neck following "a good laminectomy".

Dr. Woodland endorsed the fact that difficulty was often encountered in obtaining a view of the first thoracic vertebra and so reducing a not uncommon forward distortion of the seventh cervical vertebra. A red herring to the uninitiated, but a guide to the wary, was that a fracture of the seventh cervical spinous process might not be an innocuous "shoveller's fracture", but might indicate separation between the seventh cervical and first thoracic

vertebrae. Dr. Woodland said that he had been astounded by the cases of carpal tunnel compression now occurring, and felt very humble in the face of the discomfort that orthopaedists' past lack of knowledge had caused. He said that decompression of the median nerve was one of the most gratifying operations in surgery. The *palmaris longus* tendon was an unreliable guide to the median nerve. Cervical nerve trunk and cord compression occurred rarely in the region of the first rib. The immediate results of operation on a cervical rib were good when the diagnosis was correct. Dr. Woodland said that he was intrigued at the razor-like anterior edge of the *scalenus medius*, which he usually divided.

C. W. S. DUN (New South Wales) also spoke of the value of manipulation. He said that he most often performed manipulation without anaesthesia in the surgery, but occasionally he used general anaesthesia.

R. G. ROBINSON (New South Wales) pointed out that disk degeneration was a physiological process of aging aggravated by certain conditions, such as trauma, toxins and dehydration. He said that everyone had seen patients with disk degeneration and gross osteophytosis, but still with few symptoms and little in the way of signs. Something, usually traumatic, would cause an episode of radiculitis. It was hard to understand how trauma on the one hand caused the condition and on the other relieved it. He wondered what was the explanation of that. He also asked what was the connexion between cervical spondylitis and a rheumatoid arthritis-like syndrome affecting one or other limb from neck to finger tips.

A. I. RHYDDERCH (New South Wales) said that manipulation for brachial pain due to a disk lesion was most likely to succeed when pain was the presenting symptom, with no objective neurological changes such as wasting, sensory loss or diminution of reflexes. In the last-mentioned cases manipulation was not indicated and could be hazardous.

K. SHELLSHEAR (New South Wales) said that he had had a painful cervical disk lesion some ten years previously. Manipulation under general anaesthesia had relieved pain immediately and he had remained pain-free since.

Fractures Round the Elbow.

B. T. KEON-COHEN (Victoria) read a paper entitled "Fractures Round the Elbow". He said that subaponeurotic fractures of the olecranon were best left alone; transverse fractures in young people needed internal fixation, but in older people the fragment should be excised; in comminuted fractures the fragments should always be excised, subperiosteally if possible.

Excision of the head of the radius was often obligatory, but should be done as seldom as possible, and never in children. Internal fixation of the ulna in Monteggia fractures was almost obligatory. Most fractures of the lateral epicondyle required operation owing to rotation of the fragment, but inclusion fracture of the medial epicondyle could often be reduced by electrical stimulation of the flexor-pronator muscle group. In general, the less treatment given to fractures of the lower end of the humerus, the better the result; supracondylar fractures in children presented few difficulties if care was taken to reduce the lateral displacement first, and if no plaster cast was used after reduction.

Dr. Keon-Cohen then described the "baby-car" fracture, and said that internal fixation of the humeral fracture simplified the management of the damaged joint. There was a definite place for immediate excision in severely comminuted fractures involving the constituents of the elbow joint. With regard to complications, Dr. Keon-Cohen said that Volkmann's ischaemic contracture was more common after fractures of the forearm than after fractures about the elbow; excision of the medial epicondyle was preferable to anterior transposition of the ulnar nerve in certain cases of delayed ulnar palsy.

Fractures of the Os Calcis.

F. H. MCC. CALLOW (New South Wales) read a paper entitled "Fractures of the Os Calcis". He said that this was the "unsolved fracture". The *os calcis* would unite,

but the functional result was such that damage to that bone was disastrous. All methods of treatment left the patient with a deformed, swollen heel, a grossly restricted range of movement, and pain on walking. The essential cause of disability was traumatic arthritis of the subtalar joint, with associated flat-foot and consequent general tarsal arthritis. The cause of the traumatic arthritis was almost always the disturbance of the normal relationship of the talus to the *os calcis*; irregularity might be due to actual breaking of the articular surface of the *os calcis* or to an altered relationship between the articular surfaces due to angulation of the *os calcis*.

Dr. Callow drew attention to a misconception about the degree of displacement and reduction by means of estimating the so-called "tuber-joint" or "salient" angle. He said that that gave a good idea of the general shape of the *os calcis* but gave no indication about the articular surface.

The most important type of fracture was the one which broke the superior surface of the *os calcis*, particularly posteriorly. There might be a vertical break running down from the *sinus tarsi*, with considerable displacement of the front fragment but with the posterior fragment still

firmly fixed; in this type reduction might be fairly well obtained by traction and manipulation. In the other important type the articular surface was comminuted; that almost invariably gave unsatisfactory results, possibly because the talus became impacted among and fused with the fragments. If the fracture was not interfered with, that gave some stability, which was lost if reduction was not complete.

Dr. Callow suggested that open reduction would be worth while only if a really good articular surface could be reconstructed—that was rarely possible. Yet he could not agree that there should be no attempt at reduction and no splinting—that was contrary to first principles. But the only manœuvre which could help was to lift up the depressed articular surface and hold it in position, which could be achieved sometimes by open operation, sometimes by manipulation, and more often by means of a spike in the bone. If arthritis was likely to occur, primary arthrodesis was the best procedure. Other types of fracture, in which the antero-superior angle, together with the tuberosity of the navicular, was broken, presented no difficulties. In older people there should be no attempt at reduction, and active movement should be started at once. Prolonged immobilization was always contraindicated.

Section of Oto-Rhino-Laryngology.¹

President: A. K. Green, M.B., Ch.M., Queensland.

Vice-Presidents: A. W. Farmer, M.B., B.S., F.R.A.C.S., Western Australia; L. S. Corner, B.A., M.B., Ch.M., D.L.O., F.R.C.S.E., New South Wales; Jean Littlejohn, M.B., B.S., D.L.O., F.R.A.C.S., Victoria; R. H. von der Borch, M.B., B.S., South Australia; G. J. Ramsay, M.B., B.S., Tasmania.

Honorary Secretary: Dr. T. H. O'Donnell.

President's Address.

A. K. GREEN (Queensland) took as the subject of his president's address "Common Chronic Disorders of the Nasal Mucous Membrane". He discussed five types of chronic rhinitis and said that atrophic rhinitis and neoplastic and specific diseases would not be considered. Dr. Green first dealt with the physiological and aetiological aspects, stressing a broader concept of allergy, both as an exciting cause and as a modifying or contributing factor. A familiar belief in an allergic destiny was to some extent discounted. He presented a simpler classification into five types, largely based on the views of Voorhees; the types were chronic bacterial, intumescent, hypertrophic, chronic allergic and hyperplastic rhinitis. He then described the pathological changes, symptoms and signs of each variety. In dealing with the diagnosis, Dr. Green said that the emphasis was on the history and signs rather than on the laboratory findings. He outlined treatment under the headings of dietary, medicinal, endocrine, psychotherapeutic, hyposensitizing and surgical measures, and said that, in general, hyposensitization was the most valuable single measure.

R. C. WILLIS (Victoria) stressed the importance of nasal effects of some of the newer medical therapies, for example, hypotensive drugs and vagal blocking agents like "Banthine". He also referred to the value of physiotherapeutic breathing exercises in the management of any patient with chronic nasal conditions.

N. M. CUTHBERT (Western Australia) said that otolaryngologists should spend more time in considering the

history of the patient before putting a nasal speculum to the nose. In that way alone they would very often find the correct diagnosis and treatment of the condition present. The unsuccessful cases in which the patients had lifelong chronic polypoidal states were an interesting group from which oto-laryngologists could learn. Dr. Cuthbert said that he had two such patients: a man and a woman whose condition had resisted several complete surgical removals by himself and by others. All allergic treatments were unsuccessful. Deep X-ray therapy had been used on the male patient without any beneficial effect whatever. He was then given ACTH, 20 units three times a day for five days, under hospital supervision, and this course of treatment was repeated at an interval of some months. The treatment at once gave benefit, and with judicious intermittent use it kept both patients symptom-free. Dr. Cuthbert said that he also wished to stress the importance of physiotherapy in the treatment of chronic changes in the nasal mucous membrane.

E. P. BLASHKI (Sydney) said that naturally they were all aware that patients would not fit exactly into categorical descriptions, but that the skill of a doctor lay in assessing in which group and to what degree every patient fitted, and in applying the appropriate remedy. Dr. Blashki said that he agreed with Dr. Green that they must be careful in applying the label of "irreversible" to changes in the nose. Sometimes patients did recover when it did not seem possible. Referring to the use of vaccine, Dr. Blashki said he thought that failure might sometimes relate to the technique followed. The use of a few doses only was often unsuccessful. For years he had followed the plan of ordering a long and graduated course. The object was to begin with small doses and to increase the doses gradually and to avoid reactions. If there was a reaction of any severity, the dose was decreased, or at any rate not increased next time. The full dose was repeated several

¹The meetings held by the Section of Oto-Rhino-Laryngology with the Section of Neurology and Psychiatry, the Section of Naval, Military and Air Force Medicine and Surgery, and the Section of Radiology and Radiotherapy have already been recorded.

times at increasing intervals. The whole course might take up to six months. He had found the results worth while.

Dr. Blashki then referred to the question of substances put into the nose. He said that he found it necessary to use vasoconstrictors, but some of them undoubtedly were more irritating than others. Amongst them were some of those most popularly in use. Many years earlier he had been taught in Vienna: "If you do not know what to do for a nose, paint it with nitrate of silver." He said that there were many who would disagree with that advice. Still, it was good advice, and he had followed it successfully for nearly thirty years. The moist and allergic type of condition would respond if the nose was painted by the doctor, once or twice a week, with 5% solution of silver nitrate for about four weeks. Another very useful substance was the old Viennese solution called mucidan. Somewhere he had found a formula that corresponded to it. It was used as a spray by the doctor.

Referring to the use of radium in the nose in polyposis, Dr. Blashki said that he had used it successfully. He had always used it after not only removing the polypi, but also performing some type of surgery of access in the way of an intranasal exploration of the ethmoids to some extent. The amount of radium used was two five-milligramme tubes in each ethmoid sinus. They remained in position for twenty-four hours. Dr. Blashki was sorry that he could not state the dose more accurately in röntgens. He had employed zinc ionization on a number of occasions, but had given it up because it caused the patient much pain and did not seem to do much good. Submucous ionization with zinc needles was very difficult and not worth while. He preferred a linear cautery incision on the lower turbinates.

Dr. Blashki went on to speak of the use of vitamin A. He said that he had been surprised to hear of its use for turgid nasal conditions, as recent literature had described its use in large doses for atrophic rhinitis. Its purpose was said to be to increase the activity of the mucous membrane. The doses were of the order of 200,000 international units daily. He had treated two patients with fair results. At first he used injections of natural vitamin in oil, which had been given to him by Nicholas Proprietary, Limited; but later he had used the synthetic vitamin, which was given orally and was more effective than that used parenterally. Ascorbic acid was very useful in the allergic type of case. It had to be given in huge doses of about 750 milligrammes daily for adults, and even 500 milligrammes for children. He usually gave it for two weeks and then reduced the dose to, perhaps, 100 milligrammes. The actual effect of ascorbic acid was not clear, but there did seem to be emerging in the literature an idea that its action might be something along a parallel line with that of the cortisone group in causing some modification in the adrenal activity.

Referring to the surgical measures recommended, Dr. Blashki said that he urged the importance of observing and dealing with hypertrophic posterior ends of the lower turbinates. If that kind of hypertrophy was present and was not dealt with, the operation would not be successful in relieving the obstruction. It was as well to remember also, the swell bodies on the posterior septal edge that acted in the same manner. Another important and easy thing to do was to crush laterally too prominent turbinate bodies, or to reduce the bulk of a large cellular middle turbinate by pushing it hard laterally.

Traumatic Neuritis of Trigeminal and Cervical Nerves.

ADRIAN W. FARMER (Western Australia) read a paper on traumatic neuritis of trigeminal and cervical nerves. He said that his interest in that subject had begun as a result of the observation of facial war injuries involving the supraorbital and infraorbital nerves. Persistent neuralgia was presumed to be due to partial fibrosis of the nerve leading to the formation of a traumatic neuroma. A course of alcoholic injections into the superficial nerve trunk was advised in order to produce complete fibrosis of

the nerve structure, so strangling any axons which might convey pain impulses from the neuroma to the central ganglion. Dr. Farmer described a course which covered a period of six months, with gradually lengthening intervals between the repeated injections. When alcohol failed to produce fibrosis and the axons regenerated, the fault was usually that the injection into the nerve substance itself had not been satisfactory, particularly when the nerve was not enclosed within a bony canal. Injection of alcohol into a superficial nerve was not nearly so reliable as into the main trunk of the nerve near its origin from the cell or into the cell itself. Injection into the cell ganglion had been shown to lead to permanent anaesthesia over the dependent area. When alcohol was unsuitable or failed entirely to give relief from pain, avulsion or section of the peripheral nerve became necessary.

Dr. Farmer went on to say that in the case of avulsion of the supraorbital nerve he had found that results were not as satisfactory as in the two cases only in which he had performed avulsion of the infraorbital nerve. That opinion was also the opinion of Trumble and Ainslie regarding the supraorbital nerve; but it was believed by the neurosurgeons that that procedure still held its place in selected cases. With regard to the infraorbital nerve, failure to give relief by alcoholic injection had been due to a demonstrable neuroma situated at the infraorbital foramen, which was almost always the site of injury in facial trauma. Dissection of the nerve through the infraorbital canal right back to the pterygo-maxillary was necessary before avulsion was performed in order to include the sphenopalatine ganglion in the avulsion. If that was not done, irritative symptoms of the ganglion were likely to persist in the form of sneezing, rhinorrhoea and lachrymation.

Dr. Farmer finally quoted two cases of injury to the great auricular nerve with persistent neuralgia. He said that generally speaking he had found that repeated injections into the nerve trunk close to its origin in the neck were satisfactory. In the two cases quoted, alcoholic injection gave but temporary relief, and neurectomy of the great auricular and occipital nerves, as they made their appearance at the posterior border of the sternomastoid muscle, was performed with immediate and apparently lasting relief.

T. K. DURBRIDGE (Victoria) said that his introduction to the aspect of facial pain under discussion was of some three years' standing, and had first been stimulated by the article of Wyburd Masson quoted by Dr. Farmer. Dr. Durbridge said that following that line of attack in facial pain not obviously of traumatic origin, he was preparing notes on a series of some 30 patients in whom longstanding neuralgic pain and headache, which had resisted all previous therapy, had been completely and lastingly relieved by section of the great auricular nerve. Three of the patients deserved special mention in connexion with Dr. Farmer's subject. The first was a woman, aged more than sixty years, who was suffering from severe trigeminal neuralgia. Extirpation of the Gasserian ganglion by a competent surgeon gave her some relief, but the neuralgia returned. Section and avulsion of the great auricular nerve appeared to have given her complete and lasting relief. The second patient was a man in the same age group who had been blown up in the war of 1914-1918 and as a result had been left with chronic middle ear disease and severe facial pain. After some years the repatriation medical officer decided on mastoidectomy, and that was performed. The patient was left with a dry ear, but his pain was unchanged. After section of the great auricular nerve he had had complete relief. The third patient was a man, aged thirty years, who in Korea had received a mortar wound involving the sternomastoid muscle. On recovery from the wound he was left with severe facial pain and was down-graded to class II as a result. Injection of the nerve with local anaesthetic agent gave relief, but up to the present time the repatriation authorities had made no decision in his case. Dr. Durbridge regretted that those were the only cases that he could recall in sufficient detail to mention. However, he wished to emphasize two things: the first was that there had been only one partial failure in the cases known to him; the

second was that the procedure involved was relatively trivial, and left the patient almost completely unimpaired except for a small area of numbness on the lobe of the ear. The effect of vitamin B on the peripheral nerve might sometimes be sufficient to convert a chronic sufferer to a patient leading a normal life. For example, a man with supra-orbital neuralgia following frontal sinus operation had been kept free from pain over some years by regular injections of vitamin B.

Otological Diagnosis of Auditory Nerve Tumours.

E. J. GREEN (Western Australia) said that auditory nerve tumours were comparatively common and constituted 8% of all cerebral tumours. They were simple tumours, and satisfactory removal resulted in a permanent cure. Too often the tumour was not discovered until signs of increased intracranial pressure had arisen, and at that stage their surgical removal was a dangerous and difficult procedure. It was the present aim to diagnose those tumours at an early stage when surgical removal was easy and a complete cure could be assured.

Dr. Green went on to say that the cerebello-pontine angle in which the tumours developed was practically non-existent as a space during life, the cerebellum being in intimate contact with the postero-medial surface of the petrous temporal bone. Enlargement of the tumour in the space caused pressure at an early stage on the eighth, seventh and fifth cranial nerves and on the cerebellum. The initial symptoms of a patient might be due to involvement of any of those structures, except the seventh cranial nerve, which was particularly resistant. Symptoms due to involvement of the eighth cranial nerve often remained unnoticed by the patient. Unilateral vestibular loss of slow onset was well compensated. Unilateral loss of hearing might frequently be unnoticed and might be confused with other causes of deafness, such as inflammatory conditions, which did frequently coexist. When patients presented with symptoms of trigeminal nerve involvement or cerebellar signs, then careful testing of the eighth nerve would reveal a loss of function. Probably the most important test in that regard was the caloric test of vestibular function; the responses were usually absent on the side of the tumour and were rarely normal. Tests for cochlear function depended upon careful audiometric testing, to ascertain if perceptive deafness was present. The estimation of the bone conduction loss was there all-important. As the bone conduction drop across the skull was only five decibels, the masking of the normal ear was most important; and unless the test was correctly done, conductive deafness could be simulated.

Dr. Green said that otologists saw many patients with unilateral progressive perceptive deafness. An eighth nerve tumour must be considered in the diagnosis in all those cases. Caloric tests, examination of the fifth cranial nerve, especially the corneal reflex, and tests for cerebellar function were necessary. Confirmatory evidence might be obtained if a raised cerebro-spinal fluid protein level was found in cases in which intracranial pressure was not raised. Radiology did not help in the early diagnosis.

D. G. CARRUTHERS (New South Wales) stressed the rarity of the condition. As an illustration of the difficulty in diagnosis, he noted that in his own practice he had never been able to diagnose a case despite early and complete ear, nose and throat examination.

L. T. JOBBINS (Queensland) reiterated the late Gilbert Phillips's triad of symptoms—diminished caloric response, loss or diminution of corneal reflex and increased protein content in the cerebro-spinal fluid. Dr. Jobbins said that the odd case in which there was no increased protein content in the cerebro-spinal fluid could be due to more complete capsulation of the tumour.

M. J. EGAN (New South Wales) supported Dr. Carruthers's statement that the lesion was very uncommon. Dr. Egan said that he himself knew of only three cases. All the patients had tinnitus as an early symptom, and he noted that in all cases the audiograms showed a flat curve in the speech range with a falling off at both the upper and lower frequencies.

Dr. Green, in reply, said that he had seen more cases than usual, as his hospital handled all the neurosurgical cases in Western Australia.

Carcinoma Involving the Middle Ear Space.

G. C. HALLIDAY and T. H. O'DONNELL (New South Wales) presented a paper entitled "Carcinoma Involving the Middle Ear Space". The paper dealt with six patients suffering from neoplastic disease originating in the middle ear space or in the deep portion of the osseous meatus. The histories of those patients served to demonstrate that no hope of successfully treating that condition could be expected without the widest possible excision followed by adequate post-operative irradiation. It was possible that improved results might ensue if doses of 70,000 to 100,000 milligramme-hours over two or three weeks were given; they could be given with relative safety. The treatment used by the authors was a radical mastoid operation with excision of the entire membranous canal, as extensive as possible, followed by irradiation with 5000r given in divided doses.

E. P. BLASHKI (New South Wales) said that in the passage of many years he could recall three definite cases of carcinoma involving the middle ear. One was squamous cancer and two were anaplastic; a fourth was labelled "basal celled". This last was in a young woman aged about thirty years, who had first come under notice with a cancer of the antrum and ethmoid. Later she was found to have cancer in the middle ear from direct spread. Despite removal of the growth and irradiation, she died shortly afterwards from cancer of the liver. In this case the growth had been labelled as liable to local recurrence, but unlikely to metastasize. All the patients had been treated by as wide a surgical removal as possible, and by subsequent irradiation by means of a radium pack. All died in about two years, and during the intervening time all were greatly troubled with the severe pain mentioned by the speakers and by discharge and discharging sequestra. Dr. Blashki asked Dr. Halliday whether, in view of the report that the first patient had come under notice with a malignant gland in the neck already noticeable, and had later been found to have a large growth in the sphenoid bone, he did not think the origin of the growth was likely to be in the sphenoid or post-nasal area rather than in the middle ear.

V. J. MCGOVERN (New South Wales) said that carcinoma seldom arose in normal tissues, and that the cases under review illustrated the effect of irritation by chronic inflammation. The types of carcinoma were similar to those arising elsewhere in the naso-respiratory tract. The anaplastic variety was not unlike the anaplastic carcinoma of the bronchus. The adenocarcinoma of ceruminous glands might possibly be carcinoma of ectopic salivary glands, and Dr. McGovern said that he knew of no way of being certain of that; however, such carcinomata in salivary glands or ectopic salivary tissue were very difficult to eradicate. They infiltrated locally and frequently recurred, though they seldom metastasized.

N. M. CUTHBERT (Western Australia) referred to a female patient, aged about forty-eight years, who had come under his treatment for a chronic suppurating ear infection. The patient had been under treatment previously for twelve months, and it was not for some weeks that Dr. Cuthbert suspected a peculiar pathological condition. The ear drum had lost its topographical features, the *annulus tympanicus* was "dislocated" and granulations were evident in the middle ear, but a biopsy was not possible without some ear-drum injury. The discharge was not so great as might have been expected from a simple chronic inflammatory condition; it was rather suggestive of a *Streptococcus mucosus* type of condition. Mastoidectomy was decided upon to eradicate the chronic inflammatory state. It was then obvious that the changes had spread beyond the middle ear clinically. At operation all malignant tissue was eradicated in a radical mastoidectomy. Microscopic examination of a section revealed the presence of anaplastic carcinoma. Deep X-ray therapy was given, and twelve months later there were no clinical signs of tumour in

the healed cavity. Dr. Cuthbert remarked that it was interesting to note that the patient's case represented one of a six-year cure of a carcinoma of the auditory canal.

Some Aspects of Deafness in Children.

R. C. WILLIS (Victoria) read a paper on "Some Aspects of Deafness in Children". He laid stress on the early detection of deafness and said that to suspect it should be to follow it up by all possible means. He explained the association between deafness and speech defects, and pointed out that the congenitally deaf and dumb patient was dumb only because he had never heard speech. The "deaf and dumb" label was gradually going as modern speech-reading methods were used. Dr. Willis said that hearing aids utilized any vestige of function in the ear, but pointed out some of their inherent drawbacks.

Dr. Willis then dealt with diagnostic features in the history and in the examination of the child. He pointed out how readily a child would compensate for the slowly increasing deafness due to catarrhal changes in the middle ear, lip-reading being so good that even a severe degree of deafness might go unsuspected. On the other hand, all deafness of rapid onset would be complained of even when it was of slight degree. Colouring the treatment was the fact that in all cases of nerve or inner ear deafness the condition was to be considered as relatively unalterable by any known therapy, while all conductive or middle-ear deafness should be capable of alleviation by medical treatment. In relation to the latter group, Dr. Willis stressed the importance of the post-nasal space and gave some advice on the correct method of dealing with adenoids. The place of radon and deep X-ray therapy to the lymph tissue about the Eustachian tubes was described, and a typical case history of a child with conductive deafness was given. Serial audiograms showed the improvement obtained after a "review" of the post-nasal space by an ear, nose and throat specialist, when adenoid remnants were removed and an antral lavage was performed. Radon applications were finally needed to obtain the maximum pick-up in the hearing.

Dr. Willis went on to describe the service offered by the Commonwealth Health Department per medium of the acoustic laboratories in the capital cities. He said that those facilities were available to all children of school age (and also to certain persons accepted by the Repatriation Department). Testing and the supply of aids were free to children. Servicing was carried out and batteries were supplied also without cost to the parents. Dr. Willis finally said that the ultimate aim in the management of deafened children was to render them "socially adequate"—capable of understanding the conversation of others and of making themselves understood by speech and not by sign language.

N. M. CUTHBERT (Western Australia) said that, in children, cleft palate might result in a permanent loss of hearing of 15 to 20 decibels or more owing to interference with the musculature controlling the patency of the Eustachian tubes. In many cases there was permanent stenosis of the Eustachian tube. In addition, intranasal deformity, particularly that affecting the floor of the nose, the septum and the turbinates, created chronic nasal congestion with intermittent attacks of sinusitis. Those again superimposed an additional catarrhal deafness on the permanent middle-ear deafness. Such cases presented a difficult problem.

PATRICIA DAVEY (New South Wales) protested that the diagnosis could be made at an earlier age than had been indicated by Dr. Willis; with pitchpipes a fair approximation to an accurate audiogram could be achieved at about the age of twelve months. Dr. Davey deprecated the suggestion that audiometry in children should pass from the hands of the otologists to technicians. She finally said that children cooperated very readily and intelligently and that useful results could be obtained.

The Costen Syndrome.

FRANK ELLIS (New South Wales) presented a paper on the Costen syndrome, a condition described by J. B. Costen, an otologist, in 1934 under the name of the man-

dibular joint syndrome and associated with faulty mandibular articulation brought about by maloccluding teeth. Dr. Ellis said that knowledge of the condition had been developed in various articles by Costen as well as by others, and many views were put forward in relation to pathogenesis. Costen's list of symptoms included: (i) intermittently or continuously impaired hearing, (ii) "stopping" or a stuffy sensation in the ears, especially at meal times, (iii) tinnitus and dizziness relieved by Eustachian catheterization, (iv) dull or drawing pain within the ears, (v) headache about the vertex and occiput and behind the ears, (vi) a burning sensation in the throat, tongue and side of the nose, (vii) dryness of the mouth and aberration of taste (for example, a copper or salt taste), (viii) a snapping noise during chewing, (ix) herpes about the ear and buccal mucosa on the side of the neuralgia. Most subsequent writers had adhered pretty well to Costen's list, but Bell was emphatic that isolated symptoms could occur; Adler stated that some or all of the symptoms could be psychogenic. Dr. Ellis had encountered the following symptoms in his own cases: (a) pain of a constant nature localized either definitely in the ear or vaguely below the ear and extending down into the side of the throat (the patient's difficulty in localizing the pain was to Dr. Ellis's mind a diagnostic feature); (b) pains across the face like trigeminal neuralgia; (c) sometimes an associated sensation of fullness in the ear suggestive of Eustachian obstruction and sometimes accompanied by tinnitus. Crepitus was usually palpable or audible in one or the other mandibular joint, but mostly was not complained of. Eustachian obstruction was frequently found and difficult to clear by catheterization. The main thing in diagnosis was to know that there was such a condition. The symptoms tended to follow the same pattern. Examination of the ear, nose and throat showed nothing to account for the symptoms other than Eustachian tube blockage. Examination of the teeth and bite frequently showed the following: (a) missing molar teeth, mostly in the upper jaw, all varieties of malocclusion of natural teeth, ill-fitting or old or worn dentures, or a solitary denture resting on the bare lower gums; (b) slipping of the articular disk of one or both mandibular joints as shown by palpation, with tenderness on palpation and in acute cases swelling of the joint; (c) a weaving, irregular fashion in the approach of the lower jaw to the upper. The patient could then be referred to the dentist for diagnosis and treatment, or the following further steps could be taken: (a) X-ray examination of the mandibular joints, which often showed narrowing of the joint space or subluxation of the joint, and in advanced cases increased angulation of the neck of the mandible; (b) insertion of bite blocks (usually a piece of rubber eraser) between the jaws with instruction to the patient to chew on them, which opened the bite and often dramatically relieved symptoms. The prognosis varied, but mostly the neuralgia could be relieved on discovery of the condition, although the hearing losses were only occasionally relieved. Treatment ordinarily lay with the dentist, but to be successful it required the cooperation of the patient and of the dentist.

Dr. Ellis set out some of the views that had been put forward from time to time on the pathogenesis of the condition, but said that he had not attempted to explain the mechanism for two very good reasons: (a) he did not know the mechanism; (b) it did not greatly matter. So long as the syndrome was recognized as a very real entity in the causation of ear and face pain and related symptoms, and the bite anomaly was suspected, then the surgeon had acquitted himself and performed a great service to his patient. The treatment was then largely up to the dentist.

HAROLD ASSHETON-CHIN (New South Wales) read a paper entitled, "The Dental Treatment of Costen's Syndrome". He said that temporo-mandibular joint disturbances could be classified in three groups, and dental treatment followed that classification. When the basis of the trouble was systemic, dental treatment could consist only of limiting or eliminating mandibular movement by fixing elastic bands or wires to the back teeth. Malocclusion did not

always cause Costen's syndrome; but when it did, it had to be corrected. When the jaw had been moving into an abnormal position for a long time, immediate correction was not possible, and a denture of the correct height but with a smooth surface was first fitted to enable the mandible to readjust itself. Once that had happened, new dentures were fitted, or the natural teeth were built up. When malocclusion was due to premature occlusion of one or more teeth, it could be cured by grinding, although sometimes extraction was necessary.

Dr. Assheton-Chin went on to discuss dysfunctions caused by extrinsic trauma, of which the most spectacular was dislocation or fractures of the neck of the condyle. All such conditions were treated by immobilization, preferably by wiring; in edentulous patients the most effective method was the injection of a sclerosing substance such as sodium psylliate.

Secretory Otitis Media.

E. J. EGAN (New South Wales) read a paper on secretory *otitis media*. He said that there were six main causes of chronic conductive deafness—(i) occlusion of the external auditory canal, (ii) perforation of the tympanic membrane, (iii) Eustachian tube obstruction and secretory *otitis media*, (iv) suppurative *otitis media*, (v) adhesive *otitis media* (the end result of previous suppuration), and (vi) otosclerosis. G. Shambaugh and his associates, by an analysis of the cases of deafness from all causes dealt with in their department at Northwestern University, Chicago, had pointed out that the general prognosis for improvement of hearing by medical and surgical treatment was better than Canfield and others had stated. Shambaugh and associates considered that the prognosis for full recovery in cases of secretory *otitis media* was particularly good. However, Dr. Egan said that one of his own observations on secretory *otitis media* was that the prognosis was not particularly good in some chronic cases. In many of those the condition was difficult to treat and tardy in response, and sometimes the restoration was far from complete. Although tubal obstruction was usually the initial cause of secretory *otitis media*, allergic and endocrine factors as well as biochemical dysfunctions might be aetiological factors. Chronic secretory *otitis media* might exist with an unobstructed Eustachian tube. Complete audiological investigation of deafness due to secretory *otitis media* showed that the condition could not be easily distinguished from otosclerosis, adhesive otitis and ossicular chain fixation. Applying the impedance formula, one found that in a problem of mass (secretory *otitis media*) there was a relatively greater hearing loss for higher tones, whereas in a problem of stiffness (otosclerosis) there was a relatively greater loss in the low tones. The one certain method of diagnosis of secretory *otitis media* was aspiration of the middle ear.

Dr. Egan went on to say that repeated aspirations, paracenteses, Eustachian inflations and radium and X-ray therapy might fail to produce hearing improvement readily. The reasons were that the glandular elements opening along the lumen of the tube were particularly resistant to radiation, that when fluid was released from the middle ear it was replaced quickly by the transmission of fluid from the mastoid cells into the middle ear, that lymphatic stasis developed in the swollen middle ear mucosa, and that there might be an abundant secretion of mucus by goblet cells in a metaplastic middle ear and mastoid mucosa. In certain resistant cases mastoidectomy should be considered if the following criteria were present: (a) failure to respond to all other forms of treatment in the absence of evidence of naso-pharyngeal or sinus infection; (b) an inflatable Eustachian tube; (c) a temporary response to paracentesis and inflation, indicating that the hearing loss was not irreversible; (d) a fairly well pneumatized mastoid.

A. M. BRYSON (New South Wales), in opening the discussion, said that he thought that secretory *otitis media* occurred more frequently nowadays, and that the increase was part of the general change in the picture brought about by the sulphonamides and antibiotics. For example, the large antero-inferior perforation of the eardrum in

children was rarely seen nowadays. Further, there was what seemed to him a phenomenon that probably would not have been possible twenty years previously—patients, usually children, whose middle ears had been the site of repeated severe acute infections over a period of two or three years, and whose eardrums had never been opened by paracentesis or ruptured spontaneously and to the unskilful or inadequate examination appeared more or less normal. Many such patients could be found to have chronic or intermittent inadequate middle-ear ventilation and a demonstrable conduction deafness. Probably there had not been complete resolution in the ears from one or more attacks, and it rested with oto-rhino-laryngologists to stress the importance of following every attack of *otitis media* through to a complete and satisfactory resolution and restoration of function.

With regard to the mechanisms involved in the production of secretory *otitis media*, Dr. Bryson thought that the size of an adenoid mass was of less importance than the nature of the infection it harboured. He said that the oedema with lymphatic stasis, impaired ciliary activity and hypersecretion which so commonly accompanied tubal dysfunction were the results of a chronic low-grade infection. The reservoir of infection in adenoid sinuses or a poorly ventilated nose might not appear significant in actual mass, but its effects might be profound. For that reason Dr. Bryson thought that even small amounts of adenoid or a small blob of pus produced on proof puncture must be regarded as highly significant in searching for the cause of secretory otitis. He said that of eleven recent cases he had been able to collect at short notice, three were in children and eight were in adults, including three airline pilots. Flying and heavy smoking were associated with upper respiratory tract infections in the pilots. The children's attacks had all been associated with mild infections aborted by sulphonamides or antibiotics. None was of more than six weeks' duration. Dr. Bryson said that he had performed aspiration in six cases, in two cases on more than one occasion. In the others paracentesis had been carried out, in two cases on more than one occasion. All the adults had catheter inflation, and the children had politization. For aspiration, Dr. Bryson used an apparatus made locally by himself in November, 1953, and similar to that attributed to Gottschalk. The short bevel on the needle was essential. Dr. Bryson's impression was that a small paracentesis followed by suction with a Siegle speculum and finally down-stream inflation through the Siegle speculum was the best method of clearing the ear. He was not so enthusiastic about needle aspiration as he had been when he first obtained the instrument. However, it was useful for the patient who exhibited an increasing and stubborn disinclination for paracentesis. For anaesthesia he used a solution of cocaine in aniline oil, which was much superior to Bonain Solution. He had not seen any untoward result from either paracentesis or needle puncture.

In conclusion, Dr. Bryson said that he had not mentioned radon because he had had little experience of its use, but he felt that its best field of usefulness might lie in those cases which were of tubal rather than of middle ear or mastoid origin.

T. G. MILLAR (Victoria) said that he would limit his remarks to the problem stated by Dr. Egan—namely, the case in which there was more or less a normal eardrum. He suggested that eardrums were not really normal in those cases, but thickened by reaction in the middle and inner layers of the drum. When doubt existed, tympanic puncture and autoinflation or suction would usually establish the diagnosis. He said that it should be remembered that if there was one minim of secretion in the middle ear, there might be ten minims in the Eustachian tube. He preferred the method to aspiration, as diagnosis was established under vision, and some secretions were so tenacious that they would not pass through a needle. Persistent cases could be very difficult when the tube filled up again after repeated evacuation, and the reservoir might have to be sought in the naso-pharynx or mastoid cells.

VOLNEY BULTEAU (New South Wales) said that inspection of the "normal" tympanic membrane in cases of

secretory otitis during inflation with a Siegle's pneumatic otoscope showed that the membrane did not recoil with the usual snap that one saw when there was no fluid in the middle ear. He went on to say that his impression was that chronic secretory otitis was more prevalent at the two extremes of life, with few cases occurring in middle age. If that was true, the exact significance was not clear, but he thought that it was evidence against the theory that the condition was a relic of previous antibiotic therapy, at least as far as the cases occurring late in life were concerned.

Diagnosis and Management of External Otitis.

C. PYMAN (Victoria) read a paper entitled "Diagnosis and Management of External Otitis". He said that two factors were involved in its onset, (i) a change in pH of the skin from acid to alkaline, (ii) interruption of the continuity of the epithelial lining. Among the aetiological factors involved were the following: (i) furuncular infection due to staphylococci; (ii) a primary infection with Gram-negative organisms, especially *Proteus* and *Pseudomonas pyocyanea*; (iii) fungoid infection, including *Aspergillus nigra*; (iv) Monilia; (v) seborrhoea; (vi) allergy; (vii) unsuspected foreign bodies. External otitis occurred equally in both sexes and at any age. It was seen most commonly in the tropics. Discussing diagnosis, Dr. Pyman said that the condition fell into two main clinical groups, acute and chronic. The main features of the acute group were the following: pain, often severe and especially pronounced in fungous infection; discharge, which was not always present; pain on chewing; and a slight degree of deafness, which might be variable. Tragal tenderness was always present, and the canal was swollen and red; the condition of the drum was variable—it might be normal or it could be involved in the process. A watery or purulent non-pulsatile discharge was present. In severe cases the spread of infection could produce a picture resembling that of mastoiditis.

Discussing the differential diagnosis from acute otitis media and mastoiditis, Dr. Pyman said that in the latter cases usually an upper respiratory tract infection had been present with associated signs, there was no tragal tenderness or pain on chewing, the canal was open, hearing was well down, and the discharge was pulsatile and mucoid. In mastoiditis the swelling was always posterior and/or above if the zygomatic cells were involved; also the X-ray findings were different. In the chronic condition, the findings were chronic irritation, some pain and tenderness, a weeping ear with perhaps eczematoid changes down the neck and slight deafness. The condition of the canal might vary from the presence of scales to generalized weeping excoriation with debris. There was a variable degree of swelling. In that group the condition was often related to a seborrhoeic condition of the scalp or to eczema. The drums might or might not be reddened, and hearing was usually good. Inspection of the scalp revealed seborrhoea, and eczematous patches might be found elsewhere.

With regard to the investigations required, Dr. Pyman said that culture and sensitivity tests should be carried out and a microscopic examination of the debris should be made for the presence of fungus or monilia. Skin tests and a complete blood examination should be carried out, and the mastoid process should be examined radiologically. The differential diagnosis was from bullous haemorrhagic otitis and from *herpes zoster oticus* (Ramsay Hunt syndrome).

The treatment depended on the aetiology. Dr. Pyman urged caution in using antibiotics systemically. He said that local treatment was all-important, and without it systemic treatment was not effective. The principles of treatment were thorough cleansing, elimination of local causative agents, general measures if the condition was spreading, relief of pain and restoration of the canal to its normal state. If staphylococcal infection was the cause, treatment was by the application of heat, appropriate packing, chemotherapy, incision and, if the condition was recurrent, injections of staphylococcus toxoid and investigation of the patient for diabetes. If the condition was

due to a fungus, antibiotics should never be used. Treatment was by thorough cleansing and syringing almost daily, and the application of methyl alcohol, "Mycosol" (half strength) and subchloride of mercury (1/2000 in spirit). If the causative organism was Gram-negative, treatment was by the application of heat, packing (with an appropriate antibiotic), the application of 2% acetic acid and, in severe cases, the systemic exhibition of antibiotics. If the condition was Monillial, gentian violet was used and the canal was thoroughly syringed. If the underlying condition was seborrhoea, sulphonamide and salicylate ointment was applied, the scalp was treated, phenobarbital was administered to give relief of irritation, and for the same purpose hydroxyquinoline compounds were used. Silver nitrate solution might be employed. If the condition had an allergic basis, treatment was by antihistamines, phenobarbital, the application of gentian violet, of hydroxyquinoline compounds, of sulphonamide and salicylate ointment and of 25% silver nitrate solution. Hydrocortisone ointment might be used, perhaps in combination with an antibiotic. X-ray therapy could be useful, but care was necessary in relation to the ceruminous glands. The patient should be desensitized. Zinc cream or calamine with coal tar could be applied to the facial reactions. The patient should be advised to keep the ears dry and to avoid showering and swimming. Care should be taken not to allow dry cotton wool to adhere to the ear.

(To be continued.)

Correspondence.

COUNTRY REPRESENTATION IN QUEENSLAND.

SIR: Will you permit me to open, to a much wider audience, a discussion which took place at the annual conference of representatives of Local Associations at Brisbane recently.

There was a quite unanimous agreement that some form of country representation, on the Council, by practitioners actually resident outside the Brisbane metropolitan area was desirable. Just how real this desire is was very emphatically evidenced by a growing feeling that North Queensland practitioners should establish a branch of the Association, separate and distinct from the present Queensland Branch. The inference of such a proposition is quite obviously: Practitioners in the north feel that they have not adequate representation on the Queensland Council.

Members of Council who were present, whilst agreeing that such representation was desirable, pointed out that attempts to obtain it in the past had failed because men elected to the Council as country representatives had been unable to attend regularly and had fallen out.

It was felt, generally, that a division of the State into North and South Branches was undesirable and would, it was realized, present very real difficulties. At the conference nothing definite was achieved to provide the desired representation and so remove any need for separation.

A suggestion which gained the approval of a majority of Local Association delegates was put forward, to the effect that Regional Divisions be defined in Queensland, each such division to include a number of the Local Associations; the councils or executive committees of these divisions to have the right to nominate representatives to the Queensland Branch Council.

Past experience of annual Council elections indicated that some device of this nature was called for, because at those elections the heavy voting power of the metropolitan members, for colleagues whom they knew personally, had very commonly resulted in an all-city Council, to the exclusion of the unknown or less known country candidates.

The very large size of our State introduces distances not present in the more compact States, these distances being such as to make it unreasonable to expect any distant country member to attend monthly meetings of the Council in Brisbane regularly.

It was suggested that regional representatives might be expected to attend a maximum of four meetings annually, and that through their committees they arrange to attend meetings in rotation, so that some of the divisions would be represented at every meeting.

Whilst this would not ensure continuity of representation to each division, it would be a marked improvement on the present complete absence of representation. Consultations between divisional representatives and/or copies of minutes of the meetings they did not attend would ensure a very real continuity of knowledge and appreciation of Council activities.

There is, unfortunately, a growing feeling that the inarticulate country practitioners are being dictated to by a city council. Actually the procedure at the representative conference we are discussing illustrates one of the factors which has given rise to this feeling. The Local Associations had been requested to suggest subjects for the agenda and did so. Each matter on the agenda was first of all dealt with fairly exhaustively, and in a manner which reflected the ability and knowledge of the speakers, who were city members of the Council, before the country delegates were given an opportunity to speak at all. Now it is undeniable that this procedure saved time and obviated redundant discussion. It is also unthinkable that an intent to dictate to the gathering was wittingly included, but quite undeniably in effect it was included. Almost all questions were answered before the delegates were given an opportunity to voice the views of their associations. Discussion was rendered unnecessary; they had been told "what was what". I am, personally, quite certain that this was not the intent of the speakers, but it was the effect, and some, who had travelled long distances to speak for their colleagues, felt they had been gagged—admitting that the gagging had resulted from over-zealousness, and not from deliberate intent, and yet a sense of irritation was present.

In conclusion, sir, may I hope that you will be able to find space in your columns for my colleagues to join this discussion, either in support of or against the proposed regional representation.

Yours, etc.,

H. LEIGHTON KESTEVEN, M.D., D.Sc.

Maroochydore,
Queensland,
September 20, 1955.

THE CLASSICS AND MEDICINE.

SIR: Your footnote to my letter published in the issue of August 20, quoting the Oxford English Dictionary as laying down that "leukæmia" is the less correct way of spelling, shows that in this case Oxford is once again the Home of a Lost Cause. The influence of the Oxford English Dictionary in promoting what it considers the more correct spelling has so far been of no avail. During most of the last thirty years I have been in a position to see most of the important journals regularly, and I think you are the only one, apart from *The Journal of the American Medical Association*, to use the spelling "leuchæmia". Standard text-books, including that on blood diseases by Whitby and Britton, are on my side, likewise the great English newspapers such as *The Times* and *The Manchester Guardian*, which maintain the highest standards of English. In fact your position is like that of the soldier in the old *Punch* cartoon, of whom it was said: "They're a' oot o' step except oor Jamie."

The case for the Oxford English Dictionary rests on the authenticity of the Greek word *leukæmia*. This word is, of course, not found in Liddell and Scott. I have consulted a distinguished classical scholar, *doctus sermones utriusque lingue*, who said without any hesitation that a "c" or a "k" was almost certainly right. He promised to consult other references, and having done so, has informed me that he is unable to find any trace of *leukæmia*, and that if it is Greek, it is mighty bad Greek. Incidentally, it was Virchow who named the disease in 1845 (Bodley Scott, 1954).

I submit that the spelling "leukæmia" is soundly based, and established by usage, which counts for everything in the long run. It is a strange irony that one of the editors of the Oxford English Dictionary is also the author of the well-known book on common English usage, because "leuchæmia" is certainly very uncommon English usage.

Yours, etc.,

J. M. A. LOWSON.

Torquay,
Victoria,
September 18, 1955.

Reference.

SCOTT, R. BODLEY (1954), "Polycythæmia, Leukæmia, and Cytopenia", *Brit. M. J.*, 1:1484.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 24, 1955.¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	6(4)	4(4)	7(4)	..	..	..	..	..	17
Amoebiasis
Ancylostomiasis
Anthrax
Bilharziasis
Brucellosis	2(2)	..	..	..	..	..	..	2
Cholera
Chorea (St. Vitus)	2(2)	..	..	..	..	..	..	2
Dengue
Diarrhoea (Infantile)	15(5)	14(13)	3(3)	..	..	..	..	1	33
Diphtheria	1(1)	1	..	3(3)	..	..	..	5
Dysentery (Bacillary)	9(8)	1(1)	..	..	..	..	..	9
Encephalitis
Filariasis
Homologous Serum Jaundice
Hydatid	1	..	..	1
Infective Hepatitis	41(19)	103(79)	..	9(1)	2(2)	4	..	..	159
Lead Poisoning	4	..	..	..	..	..	4
Leptosy	1	..	..	..	..	..	1
Leptospirosis
Malaria
Meningococcal Infection	5(2)	..	1(1)	..	..	1	..	..	7
Ophthalmia
Osteomyelitis
Paratyphoid
Plague
Polymyositis	3	..	..	..	..	..	..	..	3
Pyrexial Fever	1	..	..	..	1
Rubella	74(71)	..	2(2)	2(2)	..	..	..	78
Salmonella Infection
Scarlet Fever	17(10)	16(15)	18(6)	2(1)	2(2)	..	..	..	55
Smallpox
Tetanus	1(1)	1(1)	..	1(1)	..	..	..	3
Trachoma	7(1)	..	..	..	7
Tuberculosis
Typhoid Fever	29(19)	10(10)	8	9(6)	10(8)	2(2)	..	..	68
Typhoid Fever	1(1)	..	..	1(1)	1	..	..	3
Typhus (Flea-, Mite- and tick-borne)	1	..	..	..	1
Typhus (Louse-borne)
Yellow Fever

¹ Figures in parentheses are those for the metropolitan area.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Lecture at the Balmoral Naval Hospital.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that Dr. T. M. Greenaway will give a lecture entitled "Some Cutaneous Manifestations of Systemic Disease" on Tuesday, November 8, 1955, at the Balmoral Naval Hospital at 2 p.m. Clinical cases will be demonstrated after the lecture. All members of the medical profession and senior medical students are invited to attend.

Public Health.

A CONFERENCE ON PUBLIC HEALTH IN ADELAIDE.

A CONFERENCE on public health will be held in Adelaide, South Australia, on October 27 and 28. It is being arranged by the South Australian Department of Public Health. The Minister of Health for South Australia, the Honourable Sir Lyell McEwin, K.B.E., M.L.C., will open the conference. Subjects to be discussed include the following: refuse disposal with addresses on controlled tipping and composting of organic refuse; the work of the nurse, the social worker and the almoner in public health; domestic sewage disposal systems; bacteriology applied in public health; and public health administration.

The subjects for discussion are of interest to members of boards of health, medical officers of health and health inspectors, but an invitation is extended to all medical practitioners to attend the conference. Any further particulars may be obtained from the Secretary, Department of Public Health, 17 Flinders Street, Adelaide.

Notice.

THE AUSTRALASIAN ASSOCIATION OF PSYCHIATRISTS.

THE annual meeting of the Australasian Association of Psychiatrists will be held at Canberra on October 24 to 28, 1955. The morning and afternoon sessions will be held at University House, and the evening sessions at the Australian Institute of Anatomy. All members of the British Medical Association will be welcome at the scientific sessions, beginning on Tuesday, October 25, at 9.30 a.m., and continuing until the morning session of Friday, October 28, with the exclusion of the morning session on Thursday, October 27, when the annual general meeting will be held. Further information may be obtained from the Honorary Secretary of the Association, Dr. Ian Martin, whose address is 24 Erin Street, Richmond, Victoria (telephone JA 5291).

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Brunton, Lawrence Jackson, M.B., 1945 (Univ. Sydney), Narooma, S.C.7, New South Wales.

Medical Appointments.

Under the provisions of the *Quarantine Act*, 1908-1950, the medical practitioners at present acting as State District Medical Officers at Port Samson, Port Headland, Wyndham, Onslow and Broome have been appointed as Quarantine

Officers at Roebourne, Port Headland, Wyndham, Onslow and Broome (all of Western Australia) respectively.

Deaths.

THE following deaths have been announced:

KENNEDY.—John Kennedy, on September 26, 1955, at Melbourne.

MAYO.—John Christian Mayo, on September 27, 1955, at Adelaide.

MELDRUM.—William Arthur Meldrum, on October 1, 1955, at Windsor, New South Wales.

PALMER.—Charles Reginald Palmer, on October 5, 1955, at Bulli, New South Wales.

Diary for the Month.

- OCT. 17.—Victorian Branch, B.M.A.: Finance Subcommittee.
- OCT. 18.—New South Wales Branch, B.M.A.: Medical Politics Committee.
- OCT. 19.—Western Australian Branch, B.M.A.: General Meeting.
- OCT. 20.—New South Wales Branch, B.M.A.: Clinical Meeting.
- OCT. 20.—Victorian Branch, B.M.A.: Executive of Branch Council.
- OCT. 25.—New South Wales Branch, B.M.A.: Ethics Committee.
- OCT. 26.—Victorian Branch, B.M.A.: Branch Council.
- OCT. 29.—New South Wales Branch, B.M.A.: Branch Meeting (Wagga Wagga).

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all contract practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rate is £5 per annum within Australia and the British Commonwealth of Nations, and £6 10s. per annum within America and foreign countries, payable in advance.